

**IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF OKLAHOMA**

STATE OF OKLAHOMA,)	
)	
Plaintiff,)	
)	
v.)	Case No. 4:05-cv-00329-GKF-PJC
)	
TYSON FOODS, INC., et al.)	
)	
Defendants.)	
)	

**DEFENDANTS' JOINT PROPOSED
FINDINGS OF FACT, CONCLUSIONS OF LAW**

Defendants respectfully submit the proposed findings of fact and conclusions of law attached as Appendix A.

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**IN THE UNITED STATES DISTRICT COURT
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STATE OF OKLAHOMA,)	
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Plaintiff,)	
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v.)	Case No. 4:05-cv-00329-GKF-PJC
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TYSON FOODS, INC., <i>et al.</i>)	
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Appendix A

**IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF OKLAHOMA**

STATE OF OKLAHOMA,)	
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Plaintiff,)	
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TYSON FOODS, INC., <i>et al.</i>)	
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**DEFENDANTS' JOINT PROPOSED
FINDINGS OF FACT, CONCLUSIONS OF LAW**

Table of Contents

Table of Authorities

I. BACKGROUND

A. The Parties and Subject Matter of the Dispute

1. The parties in this case are the State of Oklahoma (the “State”) and various companies that produce poultry and poultry products (collectively, “Defendants”). *See* Pretrial Order, Dkt. No. 2641 at 1 (Sept. 24, 2009); Second Amended Complaint (“SAC”), Dkt. No. 1215 at 3-9 ¶¶5-17, 19-20 (July 16, 2007). The State is pursuing claims against 12 different corporations or entities that contract or formerly contracted with poultry farmers in the Illinois River Watershed (the “IRW”) for the purpose of raising poultry. *See* Pretrial Order, Dkt. No. 2641 (Sept. 24, 2009).

2. The remaining Defendants are:

- a. **Cal-Maine Foods, Inc.**, a Delaware corporation headquartered in Jackson, MS. Cal-Maine is in the business of producing shell eggs for market. (Tr. at 4415:5-8). It has not had any production in the IRW since January, 2005. Tr. at 4412:7-10;¹ OK Ex. 6082.
- b. **Cargill, Inc.**, is a Delaware Corporation with its principal place of business in Minnesota. *See* Cargill Answer to Sec. Am. Compl., Dkt. 1240 at 5. Cargill transferred its turkey business in the IRW to Cargill Turkey Production, a wholly-owned subsidiary, in 2004 and currently has no contracts with any poultry Growers in the IRW. Tr. at 4849:13-15 (Alsup).

¹ The trial transcript, admitted deposition testimony, and pre-trial hearing transcripts cited throughout this brief are appended as exhibits. For the Court’s convenience an index of the exhibits is attached as Addendum A.

- c. **Cargill Turkey Production, LLC.**, (“CTP”) is a Delaware corporation.
See CTP Answer to Sec. Am. Compl., Dkt. 1241 at 5; Tr. at 4656:18-20 (Maupin). CTP processes turkey under the brand name Honeysuckle White, among others. Tr. at 4896:5-10 (Alsup).
- d. **George’s, Inc.** is an Arkansas corporation that contracts with 27 independent Growers in the IRW; three of those Growers’ poultry operations are located in Oklahoma and 24 of them are in Arkansas. Tr. at 3026:6-9 (M. Henderson). George’s, Inc. also owns one farm in the Arkansas portion of the IRW, and it operates nine other farms, which it leases but does not own, that are also located in the Arkansas portion of the IRW. Tr. at 3024:16-25, 3026:1-5 (M. Henderson).
- e. **George’s Farms, Inc.** is a wholly owned subsidiary of George’s, Inc. 30(b)(6) deposition of Benny McClure on August 15, 2007, 17:6-9.
- f. **Peterson Farms, Inc.**, Peterson Farms, Inc. (“Peterson”) is an Arkansas corporation founded by Lloyd Peterson in 1939. Tr. at 4841:3-7 (Houtchens). All of Peterson’s operational assets were located in Decatur, Arkansas, which is outside the boundaries of the IRW. Tr. at 4841:14-4842:3 (Houtchens). In July 2008, Peterson sold all of its poultry live production assets to another poultry company, exiting the live chicken production business. Peterson has no continuing relationship with any poultry operations in the IRW. Ok. Ex. 0827 at 2; Tr. at 4786:1-4787:13 (Houtchens).

- g. **Simmons Foods, Inc.**, is a family owned and operated Arkansas corporation with its headquarters in Siloam Springs, Arkansas. Tr. at 4119:9-15; 4119:25-4120:8; 4121:23-25. Simmons does not own or operate any poultry grow-out facilities in the IRW. 4122:4-6.
- h. **Tyson Foods, Inc.**, is a Delaware corporation headquartered in Springdale, Arkansas with operations in the IRW. *See* Answer to Second Amended Complaint (“SAC”) by Tyson Foods, Inc., Tyson Poultry, Inc., Tyson Chicken, Inc., Cobb-Vantress, Inc., Dkt. No. 1238 at 3 ¶ 6 (August 15, 2007).
- i. **Tyson Chicken, Inc.**, is a Delaware corporation headquartered in Springdale, Arkansas with operations in the IRW. Ct. Ex. 4 (Hudson Dep.), at 28:24-29:2.
- j. **Tyson Poultry, Inc.**, is a Delaware corporation headquartered in Springdale, Arkansas with operations in the IRW. *See* Answer to Second Amended Complaint (“SAC”) by Tyson Foods, Inc., Tyson Poultry, Inc., Tyson Chicken, Inc., Cobb-Vantress, Inc., Dkt. No. 1238 at 3 ¶ 7.
- k. **Cobb-Vantress, Inc.**, is a Delaware corporation headquartered in Siloam Springs, Arkansas with operations in the IRW. *See id.* at 4 ¶ 9.

3. This case regards the practice of applying poultry litter to the land as a fertilizer and soil amendment. As the Tenth Circuit has observed, the “land-application of poultry litter is a well-established farming practice.” *Attorney Gen. v. Tyson Foods*, 565 F.3d 769, 778 (10th Cir. 2009); *see also* Tr. at 1448:16-1449:4 (Phillips); 3724:18-3725:2, 3725:25-3726:5, 3734:4-12 (Pigeon); 3903:25-3904:5 (Collins); 3958:4-19 (D. Henderson); 4500:11-21 (Reed); 4864:3-8

(Alsup). Commercial poultry are raised in barns or “houses” on a bed of organic material such as wood shavings or rice or peanut hulls. Tr. at 1448:16-1449:4 (Phillips); 1802:4-19 (Fisher); 3843:21-3844:8 (Pigeon); 4496:10-16, 4518:15-17 (Reed). Poultry litter is a mixture of poultry feces and the bedding on which flocks of poultry are raised. Tr. at 1448:16-1449:4 (Phillips); 1802:4-19 (B. Fisher); 3416:16-3417:1 (Pilkington); 3898:13-19 (Collins); 4806:3-7 (Houtchens); 9848:3-10 (Clay). Farmers periodically remove the litter from the houses and replace it with clean bedding, but the timing of this process varies. Tr. at 4277:4-16 (Murphy); 4550:2-16 (Saunders); 4695:10-22 (Maupin), 9906:13-9907:4 (Clay). Previously and currently, poultry Growers, cattle ranchers, and others have spread poultry litter on fields in Arkansas and Oklahoma as a fertilizer and soil amendment. Tr. at 1448:16-1449:4 (Phillips); 3724:18-3725:2, 3725:25-3726:5, 3734:4-12 (Pigeon); 3903:25-3904:5 (Collins); 3958:4-19 (D. Henderson); 4500:11-21 (Reed); 4864:3-8 (Alsup).

4. The State alleges that this practice of land-applying poultry litter has caused waters in the Oklahoma portion of the Illinois River Watershed (“IRW”) used for recreation or drinking water to become polluted with phosphorus compounds and pathogenic bacteria. *See* Pretrial Order, Dkt. No. 2641 at 2 (Sept. 24, 2009). Phosphorus compounds are contained in poultry litter and those compounds are part of what makes litter useful as fertilizer. Tr. at 565:3-9 (Tolbert); 5023:10-16, 5129:5-10 (Johnson). The State alleges that runoff of water from fields where poultry litter has been applied has delivered excess phosphorus to these waters and resulted in various harms. *See* Pretrial Order, Dkt. No. 2641 at 2, 29-30 ¶¶16-23, 31-32 ¶¶34-46, 33 ¶59 (Sept. 24, 2009).

B. The Claims at Issue

5. Prior to trial, the Court dismissed or narrowed some of the State’s claims as stated in the Complaint. *See, e.g.*, Dkt. No. 2362 (dismissing claims for cost recovery and natural

resource damages under the Comprehensive Environmental Response, Compensation and Liability Act (“CERCLA”), 42 U.S.C. § 9601, *et seq.*, and unjust enrichment under Oklahoma common law, and narrowing other claims to requests for injunctive relief); Aug. 18, 2009 Hrg. Tr. at 153:22-154:16 (Dkt. No. 2548) (dismissing, in part, claims under the Oklahoma Registered Poultry Feeding Operations Act, 2 Okla. Stat. 10-9.1, *et seq.*).

6. Additionally, the State voluntarily dismissed certain claims and parties before trial commenced. *See, e.g.*, Dkt. No. 47 (Sept. 30, 2005) (dismissing defendant Aviagen, Inc.); Dkt. No. 2621 (Sept. 18, 2009) (dismissing Willow Brook Foods, Inc.); Dkt. No. 2042 (May 12, 2009) (dismissing Count 9); Dkt. No. 2569 at 2 (Sept. 3, 2009) (dismissing Count 8); Dkt. No. 2616 (Sept. 17, 2009) (dismissing Cal-Maine Farms, Inc.).

7. The trial in this case was conducted pursuant to a Pretrial Order, Dkt. No. 2641, which governed the adjudication of all remaining claims and defenses. *See* Tr. at 1742:25-1744:5, 1898:22-1899:8, 3160:8-3161:23, 8306:5-23.

8. Pursuant to the Pretrial Order and prior rulings of the Court, the State pursued the following claims at trial:

- (a) state law public nuisance and state law nuisance *per se*;
- (b) federal common law nuisance;
- (c) trespass;
- (d) 27A Okla. Stat. § 2-6-105 and 2 Okla. Stat. § 2-18.1; and
- (e) Resource Conservation and Recovery Act, 42 U.S.C. § 6972 (“RCRA”)

See Pretrial Order, Dkt. No. 2641, at 2.

9. Trial commenced on September 24, 2009 with the Court as the finder of fact. The State rested its case-in-chief on December 14, 2009. The Defendants rested their case on

January 13, 2010. The Court permitted the State to present a rebuttal case on January 25 and 26, 2010. In sum, since the opening statements the Court has heard 52 days of evidence and argument over the course of more than four months, not including closing statements and related arguments. Trial in this matter has been extraordinary in its length and in the amount of evidence presented, but given the significance and complexity of the issues, the Court imposed no deadline on either party.

10. After the State rested, Defendants brought a number of mid-trial motions for partial judgment under Federal Rule of Civil Procedure 52(c). The Court heard extensive argument on these motions from all parties over the course of several days.

11. On December 14, 2009, the Court orally granted Defendants' Rule 52(c) motion with regard to the State's nuisance claims, and entered judgment for Defendants on the claims of nuisance *per se*. Tr. at 8352:2-8353:5. The Court also granted Defendants' motion with regard to the State's claims based on allegations of risks from bacteria. Tr. at 8301:11-8306:23, 8353:24-8357:7. On December 15, 2009, the Court orally granted Defendants' Rule 52(c) motion concerning the State's claim under RCRA. Tr. at 8410:17-8413:5. Defendants' other Rule 52(c) motions were denied or taken under advisement.²

12. Accordingly, at this time the claims remaining for adjudication are:

- (a) state law public nuisance;
- (b) federal common law nuisance;
- (c) trespass; and
- (d) violations of 27A Okla. Stat. § 2-6-105 and 2 Okla. Stat. § 2-18.1.

² On February ____, 2010, the Court issued written findings of fact and conclusions of law to supplement its oral findings and conclusions on the Rule 52(c) mid-trial motions.

13. Several additional limitations merit mention regarding these remaining claims. First, consistent with the Court's pretrial orders,³ damages are not available in this case; at issue are claims for: (a) injunctive relief; and (b) civil penalties for alleged violations of 27A Okla. Stat. § 2-6-105 and 2 Okla. Stat. § 2-18.1. *See* Pretrial Order, Dkt. No. 2641 at 2.

14. Second, the State common law claims are for intentional torts; the State has disavowed any claim based upon negligent or other non-intentional conduct by any Defendant. Tr. at 4233:18-4235:18, 8334:9-8335:22; Pretrial Order, Dkt. No. 2641 at 10-13, ¶¶55-56, 62-63, 67-68, 72 (Sept. 24, 2009).

15. Third, the Court has previously ruled that the State's statutory and state law nuisance claims as a matter of law apply only to conduct occurring in the State of Oklahoma. *See* Aug. 18, 2009 Hrg. Tr. at 100:13-101:8, 188:7-11 (Dkt. No. 2548) (Aug. 31, 2009).

C. Scope of Requested Relief

16. The State has requested various remedies in this case. Primarily, the State seeks an injunction prohibiting the land application of poultry litter in the IRW on fields where the soil already contains a certain level of phosphorus. For purposes of this case, the parties have discussed the measurements of phosphorus in soils as "soil test phosphorus" or "STP." Tr. at 5159:11-5161:5 (Johnson). While Oklahoma law permits litter application to soils measuring up to 300 STP, the State proposes that litter application be enjoined as to soils measuring in excess of either 65 STP or, alternatively, 120 pounds per acre.⁴

³ *See* Dkt. No. 2362 at 23 (dismissing all damages claims under the Count 4 of the Complaint (alleging Oklahoma common law nuisance), Count 5 (federal common law nuisance), and Count 6 (Oklahoma common law trespass)).

⁴ *Compare* Tr. at 64:16-20 (State's opening statement), 8285:17-20, 8352:16-8353:2, 8600:7-9 (hearing on Rule 52(c) motion); *with* Tr. at 37:22-38:3 (State's opening statement), 536:5-15

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17. The State has also petitioned for an injunction that would prohibit the land application of poultry litter generated on lands in Oklahoma but outside the IRW to the extent such application involves: (i) land having a STP level of greater than 65 pounds per acre; (ii) any nutrient vulnerable groundwater area in Oklahoma; (iii) any scenic river or nutrient limited watershed; or (iv) any nutrient surplus area in a watershed flowing into Oklahoma. Tr. at 64:24-65:4. The State, however, introduced no substantial evidence regarding the application of litter anywhere outside of the IRW. The Court therefore rejects this request at the outset.

18. The State's remediation expert, Mr. Todd King, presented the Court with testimony regarding three remedial options: (i) cessation of poultry litter application; (ii) the implementation of vegetative buffer strips to hinder phosphorous transport; and (iii) improvement of drinking water treatment capacity. Tr. at 8011:23-8012:11 (King).

19. The State has petitioned the Court to require investigation of possible remedial actions, with costs of such an investigation to be borne by Defendants, Tr. at 65:5-9, and to require Defendants to bear the cost of any of the remedial actions ordered now or in the future by the Court, Tr. at 65:5-12 (State's opening statement).

20. The State also seeks civil penalties under its state statutory claims. Penalties are not appropriate here. Civil penalties under these statutes are assessed per violation, with each day or part of a day upon which the violation occurs constituting a separate violation. *See* 27A Okla. Stat. §§ 2-3-504(A)(2), (D). Even were the Court to find liability under 27A Okla. Stat. § 2-6-105 or 2 Okla. Stat. § 2-18.1, the record before the Court provides no basis to support any such

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(Tolbert), 5095:6-18, 5164:24-5165:3 (G. Johnson); *see also* Tr. at 105:3-10 (Defendants' opening statement), 8189:7-11 (hearing on Rule 52(c) motion).

penalty as the State has not presented any evidence of actual violations in specific locations on specific dates. The Court therefore also rejects this request at the outset.

D. The Illinois River Watershed

21. The IRW is a large watershed spanning northeastern Oklahoma and northwestern Arkansas. The IRW contains approximately 1.1 million acres of land, Tr. at 9811:6-10 (Clay), and includes the Illinois River and its tributaries, which drain into Lake Tenkiller, Tr. at 1597:16-21 (Fisher). Lake Tenkiller, a run-of-the-river reservoir, was created in 1954 by the impoundment of the Illinois River. Tr. at 1678:25-1679:1, 2136:24-2136:25 (Fisher).

25. The lands within the IRW have been subject to a range of uses, from urban population centers to farms to forests. In recent decades the IRW has experienced rapid population growth with attendant construction and deforestation. Tr. at 10085:19-10091:11, 10092:15-10093:6 (Grip); 8882:25-8883:7 (Connolly); DJX2239; DJX3494, DJX3676. In recent years, this region was the sixth fastest growing area in the United States and now contains approximately 300,000 people. Tr. at 10681:22-10686:18; 10689:19-10690:6 (T. Sullivan); 10091:2-11 (Grip); DJX2280. Just under ten percent of the land within the IRW is now urban. Tr. at 1623:23-1624:4 (Fisher); 9233:7-13 (Connolly); DJX2238 (map of IRW land uses).

26. The IRW also has long been a site of agricultural production including the raising of cattle, hay, poultry, and swine. Tr. at 1254:3-12 (Phillips), 9824:3-9828:8 (Clay) (describing agricultural land uses in IRW); *see, e.g.*, Tr. at 9831:24-9833:4, 9835:19-23 (Clay: cattle); Tr. at 1425:19-24 (Phillips: swine). Approximately two-thirds of IRW lands are currently devoted to agriculture. Tr. at 9820:13-21; DJX2238 (map of IRW land uses).

27. The IRW is also inhabited by various domestic animals and wildlife, including horses, sheep, deer, ducks, geese and wild turkeys. Tr. at 9850:10-9851:6 (Clay).

28. The Illinois River and Lake Tenkiller are used for recreation, including floating (canoes, tubes, kayaks, rafts), swimming, fishing, camping, hunting, biking, day tours, and equestrian activities. Tr. at 324:10-24, 326:4-327:1 (Tolbert); 959:17-960:14 (Fite); Ok. Ex. 5765; Ok. Ex. 5815. Dr. Lowell Caneday testified that approximately 2.4 million day visitors—individuals visiting but not staying overnight—visit the IRW each year, Tr. at 4356:21-4357:3 (Caneday), along with another 400,000 overnight visitors, *id.* at 4360:2-6. Of these, between 350,000 to 410,000 boat on the lake. Tr. at 4356:21-4357:3; 4358:8-17 (Caneday). A further 105,000 to 130,000 people float the Illinois River annually. Tr. at 4348:2-8 (Caneday). *Accord* Tr. at 327:24-328:2 (Tolbert); 796:7-12, 959:17-22, 922:18-21, 959:17-960:14 (Fite).

29. The IRW contains numerous waste water treatment plants (“WWTPs”). Tr. at 5424:2-5425:14 (R. Olsen). These plants discharge effluent directly into the streams of the IRW, Tr. at 511:7-512:6 (Tolbert); 8887:1-13 (Connolly); 10676:15-10678:10 (Sullivan), which ultimately drain to Lake Tenkiller. Tr. at 1597:16-21 (Fisher).

30. Some portions of the IRW’s waters are also used for drinking water. *See* Tr. at 339:1-340:18 (Tolbert). There are 18 utilities within Oklahoma that treat water drawn from the Illinois River or Lake Tenkiller and distribute drinking water to local populations. Tr. at 11021:2-23 (McGuire); Ok. Ex. 5202.

31. The Oklahoma Legislature has designated portions of streams and rivers in the IRW in Oklahoma, specifically the Illinois River, the Barren Fork, and Flint Creek, as “Scenic Rivers,” *see* 82 Okla. Stat. § 1452; Tr. at 312:5-25, 313:21-314:2, 315:6-17 (Tolbert); 3186:1-16, 3187:6-12, 3188:5-19 (Strong), and as outstanding resource waters, *see* Tr. at 323:23-324:2 (Tolbert); 3186:1-3187:12, 3188:5-19 (Strong).

32. The Oklahoma Water Resources Board (“OWRB”) has adopted a 0.037 mg/L aesthetics “criterion” for total phosphorus concentration in designated Scenic Rivers, which takes effect on July 1, 2012. *See* Okla. Admin. Code § 785:45-5-19(c)(2); Tr. at 884:22-885:14, 885:10-14 (Fite).

33. WWTP discharges in the Oklahoma portion of the IRW are not subject to this standard, but must meet a 1.0 mg/L phosphorus standard, which is nearly thirty times higher than the 0.037 mg/L goal. *See* Tr. at 884:22-885:14 (Fite).

34. Arkansas regulators believe that the 0.037 mg/L phosphorus scenic river criterion is “unachievable.” Tr. at 9519:8-9520:12, 9542:6-16 (Smith). Therefore, pursuant to a Joint Statement of Principles entered into in 2003 by the states of Oklahoma and Arkansas, Oklahoma committed to “re-evaluate [the] .037 milligram per liter criterion for total phosphorus in Oklahoma’s scenic rivers by 2012 based on the best scientific information available at that time.” Tr. at 3700:13-21 (Strong); *see* Tr. at 10797:23-10799:24 (Stephen Thompson); Ok. Ex. 5928.

35. The State of Oklahoma has not adopted a numeric criterion for total phosphorus in the numerous streams, creeks and rivers in the Oklahoma portion of the IRW that have not been designated as Scenic Rivers. *See* Tr. at 3602:1-12 (Strong); 7308:1-19 (Stevenson).

36. The ownership and sovereign trusteeship of the natural resources of the IRW has long been disputed. The State asserts “an interest in the beds of navigable rivers to their high water mark, as well as all waters running in definite streams,” and also claims that it “holds all natural resources, including the biota, land, air and waters located within the political boundaries of Oklahoma in trust on behalf of and for the benefit of the public.” Tr. at 309:18-310:20 (Tolbert); Sec. Am. Compl. ¶5 (Dkt. 1215) (July 16, 2007). The Cherokee Nation also claims ownership of much of the waters of the IRW. *See, e.g.*, 63 Cherokee Nation Code § 201

(“Waters of the Nation”). *See also* Dkt. No. 2362 (Opinion and Order granting dismissal of claims on ground that Cherokee Nation is indispensable party). The competing claims of the State and the Cherokee Nation to the waters of the IRW have not yet been resolved.

E. The Nature of Phosphorus in the Environment of the IRW

37. Much of the evidence in this case refers generally to the phosphorus compounds at issue in this case as “phosphorus” or the single letter “P.” This shorthand does not refer to elemental phosphorus (“P” on the periodic table). Elemental phosphorus “is not found naturally in the environment” but rather is “created in a laboratory and is used for things like fireworks.” Tr. at 8894:3-10 (Connolly). As a “very reactive compound,” elemental phosphorus that enters the environment reacts with oxygen to form orthophosphates and thus ceases to exist in its elemental form. *Id.* For convenience, these findings and conclusions will occasionally adopt the common shorthand of referring to phosphorus compounds as simply “phosphorus.”

38. Broadly speaking, there are four categories of phosphorus compounds relevant to the issues in this case: particulate organic phosphorus, particulate inorganic phosphorus, dissolved organic phosphorus, and dissolved inorganic phosphorus. Tr. at 8894:20-8898:7 (J. Connolly); DJX6070. This last category (dissolved inorganic phosphorus, also known as soluble reactive phosphorous, or “SRP”) is the type of phosphorus that is bioavailable for algae to uptake to fuel algal growth and reproduction. Tr. at 8896:17-8897:1 (J. Connolly).

II. STATE REGULATION OF POULTRY LITTER

39. Both Oklahoma and Arkansas comprehensively regulate the land application of poultry litter in the IRW. The regulatory schemes established by the Oklahoma legislature and the Oklahoma Department of Agriculture, Food and Forestry pursuant to the Registered Poultry Feeding Operations Act (“RPFOA” or “Poultry Act”) and Poultry Waste Applicators Certification Act (“Certification Act” or “ACA”) establish that the Animal Waste Management

Plans (“AWMPs”) issued by the State constitute legal authorization to land-apply poultry litter in compliance with the application rates and instructions prescribed therein. The record evidence establishes that litter application by Growers and licensed applicators in the IRW complies with the standards established by Oklahoma law.

A. Oklahoma and Arkansas Poultry Litter Regulatory Schemes

1. The Value of Poultry Litter

40. Oklahoma recognizes poultry litter as an effective fertilizer, and encourages its beneficial use. *See, e.g.*, 2 Okla. Stat. § 10-9.1, *et seq.*; Okla. Admin. Code § 35:17-5-1 (enacting poultry litter laws and regulations to “assist in ensuring beneficial use of poultry waste”); *see also* Ct. Ex. 14 (Peach Dep.), at 79:3-79:9 (OCC “teach[es] people how to ... apply ... and use litter in the IRW”).

41. In addition to its qualities as a fertilizer, poultry litter “provides organic matter that helps improve soil quality.” Tr. at 1448:16-1449:4 (Phillips); *see also* Tr. at 1453:21-1454:17 (Phillips); 6829:16-20 (Taylor). By adding organic material to soil, poultry litter use can reduce the risk of erosion. Tr. at 1453:21-1454:17 (Phillips). The evidence at trial showed that poultry litter also supplies micronutrients, improves soil pH, improves water retention of soil, and promotes aggregation of soil particles. Tr. at 5129:5-5132:23 (Johnson).

2. Poultry Operations and Litter Application Are Authorized by Law

42. Oklahoma enacted the RPFOA and ACA in 1998. *See* 2 Okla. Stat. § 10-9.1, *et seq.* (RPFOA); *id.* § 10-9.16, *et seq.* (ACA). The Oklahoma Department of Agriculture, Food, and Forestry (“ODAFF”) is the agency with vested authority for regulating animal waste under state environmental laws. *See* Tr. at 2889:24-2890:1 (Gunter). ODAFF subsequently promulgated rules for each Act. *See* Tr. at 2896:13-15 (Gunter); Okla. Admin. Code § 35:17-5-1, *et seq.* (RPFOA regulations); *id.* § 35-17-7-1, *et seq.* (ODAFF regulations).

43. Through the RPFOA and ODAFF regulations, Oklahoma comprehensively regulates the land application of poultry litter. Tr. at 463:14-465:6, 482:20-485:8 (Tolbert); 2936:2-5 (Gunter). The poultry litter regulatory program is designed and intended to protect the waters of the State of Oklahoma, *see* Tr. at 426:1-5 (Tolbert), and “assist in ensuring the beneficial use of poultry waste while preventing adverse effects to the waters of the State.” Tr. at 463:11-464:2 (Tolbert quoting Okla. Admin. Code § 35:17-5-1). The ODAFF regulations set forth the factors that control the amount, location, and manner in which poultry litter may be applied to any particular field. Tr. at 467:1-470:4, 482:20-483:9, 486:21-487:4 (Tolbert).

44. The RPFOA requires every poultry feeding operation⁵ to register with the State of Oklahoma. *See* 2 Okla. Stat. § 10-9.4(A); Okla. Admin. Code § 35:17-5-3(a). In addition, the RPFOA requires that all poultry feeding operations shall:

- utilize Best Management Practices, 2 Okla. Stat. § 10-9.7(A);
- have an Animal Waste Management Plan [AWMP] and comply with the application rates and instructions set forth therein, *id.* § 10-9.7(C); *see* Okla. Admin. Code § 35:17-5-3(b); Tr. at 2935:20–2937:11 (Gunter); and
- perform annual testing of the poultry litter and the soil to which it may be applied, *see* 2 Okla. Stat. § 10-9.7(E); Okla. Admin. Code § 35:17-5-5(a)(3); Tr. at 473:9-474:4 (Tolbert).

45. The ACA requires that anyone who applies poultry litter—whether as a commercial or private applicator—must first obtain an applicator’s certificate from the State Board of Agriculture. *See* 2 Okla. Stat. § 10-9.17(A); Okla. Admin Code §§ 35:17-7-3(a), 4(a).

⁵ The RPFOA defines a “Poultry feeding operation” as: “a property or facility where the following conditions are met: (a) poultry have been, are or will be confined and fed or maintained for a total of forty-five (45) days or more in any twelve-month period, (b) crops, vegetation, forage growth or post-harvest residues are not sustained in the normal growing season over any portion of the property or facility, and (c) producing over ten (10) tons of poultry waste per year.” 2 Okla. Stat. § 10-9.1(B)(20).

ACA also requires litter application, whether by a private or commercial applicator, to “comply at all times with the provisions set forth in ... [t]he Animal Waste Management Plan, if application is conducted on land operated by a registered poultry operation.” 2 Okla. Stat. § 10-9.19.⁶ All other applications in a nutrient-limited watershed must comply with a Conservation Plan. *Id.*⁷

46. AWMPs are field-specific plans setting forth the time, location, and amount of poultry litter that may be applied to each parcel of land. *See, e.g.*, DJX1, DJX3480; Ok. Ex. 4061 (AWMPs); Tr. at 2899:15-2900:5 (“[An AWMP is a] document that assists the grower in knowing what to do with their litter ... once it’s removed from the barns”) (Gunter).

47. Oklahoma defines an AWMP as “a written plan that includes a combination of conservation and management practices designed to protect the natural resources of the State as

⁶ Accordingly, the reasoning and analysis set forth herein apply equally to the land application of poultry litter by both Growers and non-Growers.

⁷ As the Court previously ruled, applications to land not operated by a registered poultry operation cannot constitute the basis for Defendants’ liability—and thus are irrelevant to this litigation. *See* Sept. 4, 2009 Hrg. Tr. at 240:1-20, 243:9-13, 244:7-10, 244:13-20 (Dkt. No. 2604) (“whether it’s a sale or to give away to a third person, if the person is not an independent contractor, then 427B doesn’t apply. 427B is constrained by its language. Words have meaning. So that will be the Court’s ruling.”).

The Court withdrew that ruling to allow the State to introduce evidence related to non-Defendant grower litter applications. *See* Tr. at 7868:3-7870:12 (“It does not mean that the court may not ultimately interpret 427B in the fashion that it did, but I am concerned because we don’t want to try this over again, if we don’t have to.”); *see also* Tr. at 8214:25-8216:4 (mid-trial hearing on Rule 52(c) motions). However, no such evidence was introduced. Moreover, even if such evidence were to exist in the record, the reasoning and authority supporting the Court’s prior ruling remains uncontroverted. There exists no legal basis to impose liability upon Defendants for the actions of non-party cattle ranchers and farmers who—bearing no connection with Defendants—obtain poultry litter from the open market and apply it to land in the IRW. *See infra* ¶ 309-320.

required by the State Department of Agriculture pursuant to the provisions of Section 10-9.7 at Title 2 of the Oklahoma Statutes.” Okla. Admin. Code § 35:17-5-2.

48. An AWMP must set forth “land application rates of poultry waste ... based on the available nitrogen and phosphorus content of the poultry waste and ... provide controls for runoff and erosion as appropriate for site conditions” based on “a soil test and current [USDA Natural Resources Conservation Service (NRCS)] phosphorus standards.” 2 Okla. Stat. § 10-9.7(C)(5); Okla. Admin. Code § 35:17-5-3(b)(6), (7); Tr. at 2941:17-2942:4 (Gunter).

49. AWMPs must also incorporate Best Management Practices (BMPs) including all those set forth in the Act and accompanying regulations. Tr. at 464:17-466:2 (Tolbert); *see also* 2 Okla. Stat. § 10-9.7(A). For example, an AWMP will include instruction regarding how the grower is “going to handle and utilize the poultry waste,” Tr. at 2900:14-15 (Gunter), and prohibitions against application in certain circumstances, including “when the ground is saturated or during rainfall events or when it’s frozen,” Tr. at 2900:17-19 (Gunter), or application to locations within 100 feet of a perennial stream, within 50 feet of an intermittent stream, to a field with a slope greater than 15 percent or on soils less than 10 inches in depth, Tr. at 484:2-485:8 (Tolbert). *See also* Tr. at 2899:15–2900:25 (Gunter); *see, e.g.*, DJX3480 (AWMP).

50. Compliance with these statutes, regulations, and AWMPs is mandatory. *See* 2 Okla. Stat. § 10-9.7(C); Tr. at 435:18-436:14, 467:1-470:4 (Tolbert); 2940:21-2941:5, 2974:21-2975:3 (Gunter); 3559:1-3561:11 (Strong). “The law requires that the [NRCS] recommendations for litter application rates be followed.” *See, e.g.*, DJX1, DJX3480 (AWMPs).

51. The Oklahoma legislature authorized the drafting and issuance of AWMPs on behalf of the State “by the USDA NRCS or an entity approved by the State Department of Agriculture.” Okla. Admin. Code § 35:17-5-3(b)(3). At present, AWMPs are drafted by soil

scientists under contract with ODAFF, each of whom possesses training and substantial expertise in this field. *See* Tr. at 2906:25-2907:11, 2909:11-16, 2986:10-18 (Gunter); *see also* Tr. at 471:2-12, 479:20-480:3 (Tolbert).

52. These plan writers tailor each AWMP to the characteristics of the specific parcel of land to which the AWMP relates. Tr. at 464:17-466:2, 489:23-490:11 (Tolbert); 2953:5-21, 2965:17-2967:10 (Gunter); 3571:9-3572:18 (Strong). Each AWMP is “absolutely site-specific,” Tr. at 6654:9-12 (Engel), “in that it incorporates everything from the statutes and the rules, but it also may incorporate particular issues that are associated with that individual’s property, like is it a bordering stream or something to that effect.” Tr. at 2899:15-2900:5 (Gunter); DJX1191B at 4 (State’s training video for farmers states that “[plan] particulars will depend on your facility, where the waters of the State are located on your property and also ... on the ... topography of your property.”).

53. The RPFOA requires AWMPs to include BMPs and provisions requiring that there be “no discharge of poultry waste to the waters of the state” and no “contamination of the waters of the state” 2 Okla. Stat. § 10-9.7 (B). The statute also provides that the procedures documented in each plan “must ensure” that “poultry waste shall only be applied to suitable land at appropriate times and rates. Discharge or runoff of waste from the application site is prohibited.” *Id.* § 10-9.7 (C)(6); *see id.* (the “poultry waste handling, treatment, management and removal shall not create an environmental or public health hazard.” In fact, an AWMP recently approved by ODAFF states expressly:

This ... (AWMP), was prepared to meet the regulatory requirements under the [RPFOA] and the rules and regulations developed under the Act. This AWMP includes a combination of conservation and management practices designed to protect the natural resources of the state. If the recommended management practices are followed, there should be no adverse environmental impact.

Cargill Ex. 79C at 3, 4.

54. The “Animal Waste Management Plan Requirements” set forth in ODAFF’s regulations include a mandate that “[s]torage and land application of poultry waste shall not cause a discharge or runoff of significant pollutants to the waters of the state” § 35:17-5-5; *see* Tr. at 467:1-470:4 (Tolbert); 2940:21-2944:13, 2972:8-2975:19 (Gunter); 3562:7-15, 3568:11-3569:9 (Strong); DJX1191B at 4 (“Your Plan will include all practices that are necessary to minimize movement of any of the poultry litter to waters of the State”).

55. Oklahoma Secretary and Commissioner of Agriculture Terry Peach has confirmed that “litter application in the IRW is legal when done in compliance with state law and applicable state regulations.” Ct. Ex. 14 (Peach Dep.), at 92:25-93:4, 93:6.

56. Oklahoma does not regulate the application of commercial fertilizer. *See* Tr. at 518:12-16, 539:19-22 (Tolbert); 847:24-848:1 (Fite). Nor does Oklahoma regulate the manure generated by cattle or the access of cattle to streams and riparian areas in the IRW. *See* Tr. at 495:22-496:2 (Tolbert); 3630:14-3631:12 (Strong).

3. NCRS Code 590

57. The RPFOA incorporates the standards set forth in the U.S. Department of Agriculture’s Natural Resources Conservation Service’s (“NRCS”) Code 590, which are the “current [NRCS] phosphorus standards.” 2 Okla. Stat. § 10-9.7(C)(5); Okla. Admin. Code § 35:17-5-3(b)(6), (7); *see* DJX3916 (Oklahoma-NRCS Code 590); Tr. at 472:3-10 (Tolbert); 2909:17-25, 2910:16-2911:20 (Gunter); 3563:2-3564:17 (Strong).

58. NRCS Code 590 is “the primary document that the State of Oklahoma relies on for putting [AWMPs] together for Growers.” Tr. at 2910:16-2911:2 (Gunter). The Legislature has mandated a specific Code 590 for use in Oklahoma (herein “Oklahoma-NRCS Code 590”). *See* Tr. at 472:3-25 (Tolbert); DJX3916 (“NRCS, OK” Code 590). The Oklahoma NRCS Code

590 states, *inter alia*, that its purpose is: (1) to “minimize agricultural nonpoint source pollution of surface and ground water resources;” and (2) to “properly utilize manure or organic by-products as a plant nutrient source.” DJX3916. State expert Dr. Johnson acknowledged that both the Oklahoma-NRCS and his own department head at Oklahoma State University approved the Oklahoma-NRCS Code 590 standard despite Dr. Johnson’s criticisms thereof. *See id.* at 5161:23-5163:15 (Johnson); *see also* Tr. at 5193:6-22 (Court).

59. Oklahoma law requires Oklahoma-NRCS Code 590 standards to be incorporated into individual Growers’ AWMPs. *See* 2 Okla. Stat. § 10-9.7(C)(5); Okla. Admin. Code § 35:17-5-3(b)(6), (7); Tr. at 2911:12-16 (Gunter). Growers in turn must follow these requirements. *See* Tr. at 2911:21-24 (Gunter: “Q. And do operators have to obey both the requirements of the state statute and whatever the limits are in Code 590? A. Yes. They follow the statute and their plans.”); *see, e.g.*, DJX1, DJX3480 (“The law requires that the [NRCS] recommendations for litter application rates be followed.”).

60. Oklahoma-NRCS Code 590 incorporates an agronomic rate for nitrogen as the limiting nutrient, but does not incorporate an agronomic rate for phosphorus. Tr. at 531:13-532:6 (Tolbert); DJX3916 at 4. The agronomic rate is the soil test value of the measured constituent at which there is 100 percent adequacy to grow the yield potential for a particular crop. Tr. at 5003:23-5004:21 (Johnson); *see also* Tr. at 372:25-373:4 (Tolbert).

61. Oklahoma-NRCS Code 590 sets maximum limits on litter application that are dependent upon whether the land at issue is in a “Nutrient Limited” or “Non-Nutrient Limited” Watershed. DJX3916 at 21. In nutrient limited watersheds, litter may not be applied to any land with an STP level greater than 300. The State first designated the Oklahoma portion of the IRW as “Nutrient Limited” effective July 1, 2006. Tr. at 2910:7-12 (Gunter). Prior to that time, the

non-nutrient limited Code 590 standards applied to the IRW, including the STP cap of 400 pounds per acre. DJX3916 at 21; Tr. at 3657:11-25 (Strong).

4. Training in the Handling of Poultry Litter

62. The RPFOA requires all poultry feeding Growers and all certified applicators to receive nine hours of education “on poultry waste handling” in the first year and no fewer than three hours each year thereafter. *See* Okla. Admin. Code §§ 35:17-5-11(a)-(b); -7-8(a)-(b). The training generally is provided through the Oklahoma State University Extension Service and usually includes the participation of ODAFF officials—including ODAFF Deputy General Counsel Teena Gunter—in the educational programs and training videos. *See* Tr. at 2917:23-2919:12 (Gunter); *see, e.g.*, DJX1185 (OSU Extension Service handouts); DJX1191-A, DJX1191-B (training video excerpt and transcript).

63. Ms. Gunter testified that her participation in these educational programs included explaining “how an Animal Waste Management Plan works,” and discussing the statutes, regulations and AWMP requirements. Tr. at 2918:9-2919:16 (Gunter); DJX1185 (OSU Extension Serv. handouts); DJX1191-A, 1191-B.

64. During the mandatory training, Growers and applicators have been instructed, *inter alia*, (1) that the purpose of Oklahoma’s animal waste regulations is to remove the threat of pollution by not allowing any discharge into surface waters; and (2) that the AWMP requirements are intended to address site-specific variables—including soil type, gradient, and water proximity—that may affect such discharges. Tr. at 2938:25-2948:2, 2959:18-2967:11, 2969:16-2972:7, 2974:9-2975:18 (Gunter).

65. During the mandatory educational training session on AWMPs, the training video displays the following statement: “Your Animal Waste Management Plan will include particular practices to ensure you do not have runoff from land application sites to waterways surrounding

your facilities.” Tr. at 2973:1-9; DJX1191-A. As this statement is displayed, Ms. Gunter tells Growers that “Your Animal Waste Management Plan will also include particular practices which you can use to make sure that you do not have runoff of the poultry litter from your land application sites to waterways surrounding your facilities.” DJX1191-B at 4; Tr. at 2973:10-2974:4 (Gunter).

5. Reliance on State Regulations and AWMPs

66. The poultry Growers and certified applicators appearing as witnesses in this case uniformly testified that they understood that an AWMP provides instructions on “the production, handling, and distribution of wastes in a manner that prevents or minimizes degradation of air, soil, and water resources.” Tr. at 3856:24-3858:6, 3859:7-18, 3860:7-9 (Pigeon); *see also, e.g.*, Tr. at 3856:24-3857:20 (Pigeon); 3922:24-3923:2 (Collins); 4099:6-4104:13, 4116:19-4117:9 (Anderson); 4576:22-4588:9, 4596:13-4597:12, 4588:20-25 (Saunders); *see also, e.g.*, DJX1, DJX3481; Ok. Ex. 4061 (AWMPs).

67. In addition, the poultry Growers and certified applicators uniformly testified that they rely upon the AWMPs to ensure compliance with Oklahoma law. Tr. at 3856:24-3857:20 (Pigeon); Tr. at 3922:24 – 3923:2 (Collins).

68. Grower Bill Anderson testified of the land application rates set forth in his AWMP that “[t]he state’s the one that wrote this – sent me this so that’s what I knew I could put on.” Tr. at 4116:19-4117:8. Mr. Anderson understands that “the law requires that the National Resources Conservation Service (NRCS) recommendations for litter application rates [set forth in AWMPs] be followed.” Tr. at 4100:20-4101:6.

69. Grower Al Saunders testified that his understanding of the purpose of an AWMP is to ensure “[t]hat we don’t overapply litter and take care of our natural resources.” Tr. at 4588:15-19. Mr. Saunders also testified that his understanding is that if he “compl[ies] with the

requirements of [his] Animal Waste Management Plan, [he will] be doing what Oklahoma expects [him] to do to protect against water pollution.” Tr. at 4588:20-25.

70. Grower Jim Pigeon testified that he consults his AWMP to “aid me in knowing what rates I can apply litter to what fields.” Tr. at 3857:14-25; Ok. Ex. 4061 (Pigeon AWMP). Mr. Pigeon also testified that he understands “the law requires that the National Resources Conservation Service (NRCS) recommendations for litter application rates [set forth in AWMPs] be followed.” Tr. at 3864:10-15.

71. Grower Joel Reed testified that he relies on his soil tests to determine the amount of litter to apply. In response to questioning whether he has applied litter in excess of the agronomic need, Mr. Reed testified “I am going by the rules and regulations that the state has ... me go by.” Tr. at 4483:22-25, 4517:6-19.

72. Certified applicator (and former grower) Roger Collins testified that he is “advised by the State” on how to handle and apply poultry litter, and he “[does not] spread at any rate above what we’re supposed to by the state laws.” Tr. at 3922:24-3923:2, 3944:13-16. Mr. Collins also testified that he understands that he is “allowed to apply up to 300 [STP]” on land in the IRW, but does not always apply up to 300 STP because “[i]t’s the maximum limit that I look at whether I can spread or not.” Tr. at 3939:21-3940:19, 3950:8-17.

73. Growers further testified that they believe that compliance with the requirements of Oklahoma law makes them “good steward[s]” of the environment because they follow “the state statutes that [have been] set out for us.” Tr. at 4605:6-23 (Saunders). Grower Al Saunders testified, “I test the land. I test the litter. I apply the litter at the rate they require. I don’t apply as much as I could.... I feel like we’re taking care of the environment.” Tr. at 4605:13-23.

74. Representatives of each Defendant testified that the poultry companies rely “on the local, state and federal regulations, the state inspectors, environmental inspectors to ensure” that the contract Growers were implementing sound environmental practices. Tr. at 3316:20-3317:6 (Keller, former Tyson employee); *see also* Ct. Ex. 7 (Butler Dep.), at 78:07-78:15 (Cobb Vantress Representative); 4143:16-4144:16, 4146:12-17 (Simmons, Simmons Representative); 4308:3-4309:4 (McClure, George’s Representative); 4450:23-4451:7 (Storm, Cal-Maine Representative); 4732:5-4733:3, 4734:14-4735:5, 4735:16-4736:9, 4771:21-4773:4, 4777:19-4778:7 (Maupin, Cargill employee); 4797:16-24, 4797:12-24, 4809:23-4810:13, 4831:15-23, 4832:13-19, 4834:7-4835:9, 4839:5-25, 4843:8-18 (Houtchens, Peterson Representative).

75. Defendants’ representatives testified they believed that this reliance was reasonable because the NRCS and relevant State officials have the “technology and the expertise” to “to assist our Growers in making sure that their ... operations did not pollute the environment.” Tr. at 4144:3-9 (Simmons); *see, e.g.*, Tr. at 4734:25-4735:5 (“They’re experts, we rely on their judgment.”) (Maupin, Cargill Representative); 4771:21-4773:3 (“[AWMPs] give[] us the assurance that nutrients are being handled in a proper way on that farm. The plan is written by a trained professional. The plan should be based on science from the area that it’s written in. ... [W]e know that those are site-specific plans carried out by trained professionals, and it’s a part of a good, sound environmental practice for our business.”) (Maupin, Cargill Representative).

76. In sum, the evidence presented at trial demonstrates without exception that the Growers, applicators and Defendants all believe that compliance with the requirements and land application rates set forth in AWMPs drafted and issued by the State of Oklahoma will prevent

or limit nutrient pollution to the waters of the State in accordance with state law and requirements.

6. Enforcement of Oklahoma Litter Laws

77. Oklahoma law provides authority to monitor and punish any grower or licensed applicator who violates any of Oklahoma's environmental laws, including the RPFOA.

78. ODAFF may: (1) assess penalties and points to Growers who fail "to utilize or comply with Best Management Practices or the [AWMP] and the failure results in actual harm to natural resources of the state," Okla. Admin. Code § 35:17-5-10.1(2)(H), and; (2) assess penalties and points for the "[f]ailure ... to utilize or comply with Best Management Practices or the [AWMP] and the failure results in potential harm to natural resources of the state," *id.* § 35:17-5-10.1(2)(I). The RPFOA also provides that "[v]iolations involving the greatest harm to the natural resources of the state, ground or surface water quantity or quality, public health or the environment shall receive the most points and shall be considered *significant violations*." 2 Okla. Stat. § 10-9.12(B)(1)(a) (emphasis added). The RPFOA separately provides for criminal penalties for violations of the litter application laws. *See* 2 Okla. Stat. § 10-9.11.

79. Even absent imposition of violation points, the State Board of Agriculture may deem a violation that results in serious harm to be so significant as to warrant immediate designation as a Confined Animal Feeding Operation ("CAFO"). 2 Okla. Stat. § 10-9.9(A). Under Oklahoma's CAFO Act, the State Board of Agriculture is also authorized to designate any poultry feeding operation as a CAFO if "it is determined to be a significant contributor of pollution to the waters of the state." *Id.* § 20-44(A)(3), (C). An animal feeding operation designated as a CAFO is subject to greater scrutiny, stricter requirements, and more in-depth record-keeping requirements. *Id.* § 20-40, *et seq.*; *see also* Tr. at 2932:2-16 (Gunter).

80. ODAFF has two poultry inspectors who work in the IRW, who are responsible for inspection of the operations for 53 and 24 IRW Growers in Oklahoma respectively. Tr. at 2923:12-2924:7 (Gunter). These inspectors conduct annual inspections of all farms at which litter applications occur and investigate any complaints received about any of the farms assigned to them. Tr. at 2924:8-2925:18 (Gunter); 4508:4-25 (Reed); 3846:25-3856:23 (Pigeon); DJX3404, DJX3543-0006; *see, e.g.*, DJX1848-0047, DJX1848-0043, DJX1700, DJX3405, DJX1848-0037, DJX1848-0146, DJX3533-0010 (annual inspection reports for grower W.A. Saunders); Cargill Ex. 79B, 80B and 87B; *see also, e.g.*, Tr. at 3865:8-3872:15 (identification, and subsequent correction, of reporting error noted during annual inspection) (Pigeon); Ok. Ex. 2875D (same).

7. The State Presented No Evidence of Violations Attributable to Defendants of Oklahoma's Poultry Litter Regulatory Scheme

81. The evidence presented at trial established that poultry litter is land-applied in the Oklahoma-portion of the IRW consistent with Oklahoma law.

82. The representatives of the State who testified at trial had no knowledge of any violations of the Act or regulations. *See* Ct. Ex. 14 (Peach Dep.), at 38:19-38:24, 39:1-39:4, 75:2-4, 75:6-10, 75:12-14, 75:16-76:2, 76:3-10, 92:25-93:4, 93:6; Tr. at 476:12-15, 478:2-5, 490:20-24 (Tolbert: same); *see also* Tr. at 2696:15-23 (Fisher); 4843:19-4844:4 (Houtchens); 4977:9-4978:13 (Alsup).

83. The Growers and applicators appearing as witnesses in this trial—who were all selected and called by the State—testified uniformly that they comply with the litter application rates and requirements set forth in AWMPs. Tr. at 3852:18-3853:3, 3864:20-3865:6 (Pigeon); 3937:21-24, 3939:1-3 (Collins); 4097:22-4098:8, 4103:11-25 (B. Anderson); 4493:8-11, 4508:4-25 (Reed); Tr. at 4588:20-25, 4595:19-23 (Saunders).

84. Defendants similarly comply with state and federal regulations—including the litter application rates and instructions set forth in AWMPs or NMPs—on company owned or operated farms. *See, e.g.*, Tr. at 3088:25-3089:9 (M. Henderson); 3317:11-3318:8 (Keller).⁸

85. The State presented no substantial evidence to the contrary showing violations of ODAFF regulations. Dr. Fisher testified that during the pendency of the lawsuit the State hired a dozen Tulsa detectives to conduct surveillance of litter hauling and spreading activities in the IRW; this surveillance did not result in the admission of any evidence of violations of the RPFOA. Tr. at 1654:15-19, 2696:15-23 (Fisher).

86. The few violations that can be discerned from the ODAFF grower files that the State put into evidence were either primarily technical in nature, *see, e.g.*, Tr. at 4977:9-4979:16 (Alsup); Tr. at 4595:19-4596:6 (Saunders), or involve issues that were corrected by the grower in consultation with the agency.⁹

⁸ Peterson never owned, operated, or managed any poultry growing operations in the IRW. Tr. at 4787:11-20, 4793:3-15 (Houtchens); Ct. Ex. 6 (Wear Dep.) at 18:25-19:6, and the record is undisputed that it has not land applied or managed any poultry litter within the IRW. Tr. at 4802:10-17, 4842:4-9 (Houtchens).

⁹ For example, in the course of an annual inspection ODAFF identified possible violations by Lois Hampton (Cal-Maine Grower), with deficiencies noted as “records not up to date or in order,” “[AWMP] is not being followed,” and “AWMP needs to be updated to include soil and litter tests.” Ok. Ex. 2798-B at OKDA0005536. ODAFF inspector David Barry reported that: “Ms. Hampton is around 72 years old, I believe her husband left her, and the IRS is investigating her. ... [her] records are unorganized and are very confusing, and she doesn’t understand how to follow her AWMP. ... Ms. Hampton needs tech assistance on record keeping, organization and how to follow a AWMP. ... I will be tech assisting for the above. I believe she is trying, just needs help.” Ok. Ex. 2798-B at OKDA0005537. Following receipt of tech assistance, Ms. Hampton’s annual inspection reports affirm that the “AWMP is being followed by this operation.” Ok. Ex. 2798-B at OKDA0005480-82 (“Records are in excellent shape!!! ... No litter was applied on site during inspection period.”); *see* Tr. at 4460:13-4462:6 (Storm, discussing L. Hampton); *see also, e.g.*, Tr. at 3865:8-3872:15 (describing identification, and subsequent correction, of reporting error noted during annual inspection) (Pigeon); Ok. Ex. 2875D (documentation from Pigeon grower file).

87. There is no record evidence that any of the handful of issues identified caused any pollution or injury to the waters of the State. Tr. at 3578:12-18 (Strong: can not “identify any grower or farm under contract with any of the defendants that has engaged in a practice that results in runoff of poultry waste to the waters of the IRW”); Ct. Ex. 13 (Stephen Thompson Dep.), at 16:14-20:2, 21:10-22:4, 22:9-22:25 (ODEQ Executive Director not aware of any circumstances in which a grower associated with any defendant has caused pollution to the waters of the State in the IRW).

88. The current and former Secretaries of the Environment confirmed that there have been no “significant violations” of the RPFOA. Tr. at 477:16-478:5 (Tolbert); 3579:20-3581:4 (Strong). The ODAFF Deputy General Counsel also confirmed that she was unaware of any “significant violations.” Tr. at 2968:9-2969:15 (Gunter). No poultry operation in the IRW has ever been designated a CAFO because of a significant violation finding. Tr. at 2931:10–2932:21 (Gunter); 2 Okla. Stat. §§ 10-9.9(A), 20-44(C). And, no criminal prosecution has been brought for an RPFOA violation. Tr. 476:12-15 (Tolbert); Tr. at 2968:9-2969:15 (Gunter).

89. The Oklahoma Department of Environmental Quality (ODEQ) has never made a finding that the spreading of poultry waste on any lands within the IRW presents an imminent and substantial endangerment to human health. *See* Ct. Ex. 13 (Stephen Thompson Dep.), at 34:19-25.

90. In sum, the available evidence indicates that the statutory and regulatory scheme governing the land application of poultry waste in the State of Oklahoma has been implemented and generally is being followed by Growers and licensed applicators.

91. There is no evidence that ODAFF, the plan writers, or any other responsible state officials are failing to carry out their duties under the Poultry Act and regulations in a diligent

and good faith manner. Secretary Strong disclaimed any such suggestion. Tr. at 3571:19-23 (Strong: “Q. And you're certainly not suggesting that the men and women who draft these Animal Waste Management Plans are proceeding in bad faith and not complying with the statutory and regulatory standards, are you? A. I'm not suggesting that, no.”).

92. Absent such evidence, this Court presumes that these public officers have properly discharged their duties and that the law is being followed. *See Utah Envtl. Cong. v. Richmond*, 483 F.3d 1127, 1134 (10th Cir. 2007) (“presumption of regularity ... is especially strong where ... the challenged decision[] involve[s] technical or scientific matters within the agency’s area of expertise” (internal quotations omitted)); *Butler v. Principi*, 244 F.3d 1337, 1340 (Fed. Cir. 2001) (a presumption of regularity applies to “official acts of public officers” allowing a court, “[i]n the absence of clear evidence to the contrary,” to “presume[] that public officers have properly discharged their official duties”) (citing *United States v. Chem. Found. Inc.*, 272 U.S. 1, 14-15 (1926)); *see also Bergman v. Bonaparte*, 155 Okla. 165, 168 (1932) (“In the discharge of the duties of public officers, in the absence of evidence to the contrary, the law presumes that such officers have properly performed their duties.”).

8. Oklahoma’s Poultry Litter Regulatory Scheme Reflects The Legitimate Policy Decisions Of The State Of Oklahoma

93. The adoption of the STP limits set forth in Table 9 of Oklahoma-NRCS Code 590 reflects the State of Oklahoma’s policy judgment. Tr. at 482:20-483:9, 486:21-487:4 (Tolbert); *see* Tr. at 2979:19-23 (Gunter: “[S]elect[ion of] the current NRCS standard ... was implemented as a part of the public policy of the state by the legislature.”). Funding levels for inspections and enforcement of those laws similarly reflects the State’s policy choice. Tr. at 478:19-23 (Tolbert). ODAFF’s mission is to “implement[] the public policy set out by the legislature.” Tr. at 2978:12-20 (Gunter).

94. Oklahoma, through ODAFF, currently has the statutory authority to alter land application rates in the Oklahoma portion of the IRW. Tr. at 487:5-8 (Tolbert); 2914:21-2915:17, 2948:25-2950:18 (Gunter); 3564:22-3566:17 (Strong); 2 Okla. Stat. § 10-9.

95. Neither the legislature, nor ODAFF, nor any other state agency has formally advocated for the adoption of more stringent standards to limit or prohibit the land application of poultry litter in the Oklahoma IRW. Tr. at 532:7-23 (Tolbert); 882:4-23 (Fite); 2922:20-2923:10, 2984:21-2985:11 (Gunter). In fact, the State adopted the current standard after the Governor's animal waste task force specifically considered and voted against recommending lower STP ceilings. Tr. at 3585:1-3588:20 (Strong) & DJX2616; *see also* 2978:21-2979:23 (Gunter).

96. The Office of the Oklahoma Secretary of the Environment has not formally petitioned the legislature or ODAFF to lower the land application rates governing the application of poultry litter in the Oklahoma portion of the IRW. Tr. at 476:16-477:2, 488:12-17 (Tolbert); *see also* Tr. at 3564:1-11 (Strong). Ms. Gunter testified that ODAFF has not received a formal request from any Oklahoma agency to make such a change. Tr. at 2915:3-6. However, Ms. Gunter admitted that ODAFF could act unilaterally as it does not need a formal request to amend its own regulations. Tr. at 2915:18-2916:8 (Gunter).

97. While this lawsuit has been pending the State has continued to draft, approve, and issue AWMPs to Growers in the IRW. Tr. at 475:2-6 (Tolbert); 3579:5-9 (Strong).

9. State Claims in This Lawsuit Are Based Upon Disagreement with the Policy Choices Reflected in Current Oklahoma Law and Regulations

98. The State has pursued this litigation to seek an injunction against land applications of poultry litter that are made in accordance with site-specific State authorization.

The State's litigating position reflects a disagreement with current State law and regulations that was reflected repeatedly in the testimony of State witnesses.

99. For example, Secretary Tolbert testified that he "disagree[s] with the law as it currently stands today" in particular the standards set forth in Code 590. Tr. at 489:8-15.

100. Ms. Gunter admitted that through this lawsuit the State seeks a result "more restrictive than the present existing Code 590 and existing Animal Waste Management Plans as set out by [ODAFF's] rules and regulations and by the legislature." Tr. at 2980:14-23.

101. Shanon Phillips, director of the Water Quality Division of the Oklahoma Conservation Commission, testified that her "preferred outcome" from this litigation is, in part, to achieve a reduction in the land application of poultry litter in the IRW through the imposition of land application rates more restrictive than those currently provided for by Oklahoma law. *See* Tr. at 1504:15-1507:1.

102. The State's expert Dr. Johnson acknowledged that he failed to consider the role of AWMPs drafted pursuant to the current legal standards because he believes that "the laws of Arkansas and Oklahoma should be changed and replaced with [his] absolute 120 STP criteria." Tr. at 5171:3-8; *see id.* at 5161:6-22.

10. Arkansas Laws and Regulations Governing the Land Application of Nutrients

103. Although the State argued that conduct in Arkansas causes injury in Oklahoma, the State failed to offer any substantial evidence regarding the use or regulation of poultry litter in Arkansas. Apart from brief discussions of litter applications at a handful of company-owned farms, the State presented no evidence of litter application in the Arkansas portion of the IRW. *See, e.g.,* Tr. at 3088:25-3089:9 (M. Henderson); 3317:11-3318:8 (Keller); 3419:14-19

(Pilkington). Nor did the State present any evidence regarding poultry litter regulation in Arkansas.

104. The State of Arkansas expressly authorizes the land application of poultry litter at specific rates, times and locations through the issuance of Nutrient Management Plans (“NMPs”) and Poultry Litter Management Plans (“PLMPs”) drafted, issued, and approved by the State.¹⁰

105. In 2003, Arkansas enacted legislation to regulate the land application of nutrients. *See* Ark. Code Ann. § 15-20-901, *et seq.*; *id.* § 15-20-1001; *id.* § 15-20-1101, *et seq.* The Arkansas Natural Resources Commission (“ANRC”) passed implementing regulations in 2005. *See* Tr. at 9495:4-18 (Smith); *see also* 138-00-019 Ark. Code R. § 1901.1, *et seq.*; 138-00-020 Ark. Code R. § 2001.1, *et seq.*; 138-00-021 Ark. Code R. § 2101.1, *et seq.*; 138-00-022 Ark. Code R. § 2201.1, *et seq.* These regulations were subsequently revised, effective January 1, 2010, and can be found at Arkansas Regs Title XXII Section 2201, *et seq.* *See* DJX8133 (revised § 2201.1, *et seq.*); Tr. at 9537:14-9538:3 (judicial notice of revised rules).

106. Prior to the enactment of the nutrient management statutes, the ANRC conducted voluntary educational, informational, and implementation programs to control nonpoint source pollution. *See* Tr. at 9484:7-9486:5, 9486:6-9487:19 (Smith). ANRC’s priority in the IRW was to make NMPs available to the farmers by “contract[ing] with some of the conservation districts in the state so that we could have some technicians to prepare Nutrient Management Plans for Growers in that area.” Tr. at 9484:19-24 (Smith). Arkansas poultry companies, including many of the Defendants in this case, supported the ANRC’s efforts by encouraging Growers to adopt

¹⁰ The distinction between NMPs and PLMPs is not relevant for purposes of this litigation. In fact, where approved by the ANRC, Arkansas authorizes a poultry litter management plan (“PLMP”) to either be a part of or replaced by a comprehensive nutrient management plan (NMP). *See* Ark. Code Ann. § 15-20-1108(b)(3); 138-00-022 Ark. Code R § 2204.5.

and follow NMPs and providing them with education and information about the program. Tr. at 9489:2-11, 9593:6-9594:6 (Smith); *see, e.g.*, Tr. at 4250:11-4251:9 (Rutherford); 4858:25-4859:10, 4893:7-4894:2 (Alsup). Prior to the passage of the Arkansas statutes, many Growers had voluntarily applied for and were operating pursuant to NMPs. Tr. at 9481:11-9482:12; 9484:7-9486:5 (Smith); *see, e.g.*, Ok. Exs. 3337, 6287, 6535 (Arkansas voluntary NMPs); *see also* Tr. at 4893:7-4894:2; 4964:22-4966:20 (Alsup); Cargill Ex. 6-CD (encouraging Arkansas Growers to obtain NMPs).

107. In 2003, the Arkansas legislature enacted its mandatory nutrient management law to regulate *inter alia* the use poultry litter while maintaining soil fertility. Ark. Code Ann. § 15-20-1102(4); *see* 138-00-022 Ark. Code R. § 2201.1 (“The primary goal of this Title is to maintain the benefits derived from the wise use of Poultry Litter, commercial fertilizers, and other soil Nutrients while avoiding unwanted effects from excess Nutrient Applications on the waters within the State.”). The ANRC’s rules “are designed to protect the waters within the State from adverse effects of excess nutrients while allowing for maximum soil fertility and proper plant growth.” ANRC Reg. 2201.1; Tr. at 9493:15-9494:14 (Smith). These rules and regulations represent Arkansas’s policy judgment. *See* Tr. at 574:2-6 (Tolbert); 9493:10-14 (Smith).¹¹

108. Arkansas’s comprehensive regulatory system governs poultry feeding operations and the land application of nutrients—including both poultry litter and commercial fertilizer. The Arkansas Poultry Feeding Operations Registration Act sets forth registration and reporting requirements for all poultry feeding operations. *See* Ark. Code Ann. § 15-20-901, *et seq.*, 138-

¹¹ Defendants supported enactment of the nutrient management statutes regulations. *See* Tr. at 9518:7-25 (Smith).

00-022 Ark. Code R. § 1901.1, *et seq.* The Arkansas Soil Nutrient Management Planner and Applicator Certification Act establishes nutrient management education, training and certification requirements for all nutrient management planners (who draft NMPs and PLMPs) and for all nutrient applicators operating in nutrient surplus areas. *See* Ark. Code Ann. § 15-20-1001, *et seq.*; 138-00-020 Ark. Code R. § 2001.1, *et seq.*; 138-00-021 Ark. Code R. § 2101.1, *et seq.* Finally, the Arkansas Soil Nutrient Application and Poultry Litter Utilization Act (“NAPLUA”) governs the land application of nutrients through requirements applicable to nutrient surplus areas, NMPs and PLMPs. *See* Ark. Code Ann. § 15-20-1101, *et seq.*, 138-00-022 Ark. Code R. § 2201.1, *et seq.*; DJX8133 (revised rule).

109. The Arkansas legislature has designated the IRW as a “nutrient surplus area[] for phosphorus and nitrogen.” Ark. Code Ann. § 15-20-1104(a)(1); 138-00-022 Ark. Code R. § 2202.1(A)(1). All land application of designated nutrients in the IRW (including commercial fertilizers) must be “done in compliance with a nutrient management plan approved by [ANRC] and performed by a “certified nutrient applicator.” Ark. Code Ann. § 15-20-1106(a), (d)(1)(A).

110. The NAPLUA establishes specific requirements governing nutrient surplus areas. First, all poultry feeding operations must obtain and comply with a PLMP developed by a certified nutrient management planner. *See* 138-00-022 Ark. Code R. § 2202.3(D); *see also* Ark. Code Ann. § 15-20-1108. Second, any “[a]pplication of poultry litter to soils or associated crops within a nutrient surplus area [must] be done in accordance with a nutrient management plan or poultry litter management plan,” developed by a certified nutrient management planner.¹² *See*

¹² This requirement became effective January 1, 2007. *See* Ark. Code Ann. § 15-20-1106(f). Prior to January 1, 2007, poultry litter applications in nutrient surplus areas were required to comply with *either* a nutrient management plan *or* a “protective rate” established by the ANRC. *See* Tr. at 9496:7-9497:7, 9514:7-9515:20 (Smith); Ark. Code Ann. § 15-20-1106(a), (f); *see*

Ark. Code Ann. § 15-20-1106(f); 138-00-022 Ark. Code R. § 2202.3(A)(1), 4(B); *see* Tr. at 9493:10-9494:11, 9510:12-24 (Smith); Ark. Code Ann. §§ 15-20-1106, -1108. This applies equally to poultry feeding operators (Growers) and certified commercial or private applicators (third-party farmers).

111. Arkansas requires certified nutrient planners to develop both NMPs and PLMPs to “meet[] all applicable standards” by providing “sufficient documentation to demonstrate that Litter and associated Nutrients will be managed in compliance with these Rules and in a manner sufficient to protect the Waters Within the State.” 138-00-022 Ark. Code R. § 2203.1(B), .3(A), 2204.1(B), .2(A). The NAPLUA provides that “[a]n approved plan shall constitute a permit to apply nutrients consistent with the plan.” Ark. Code Ann. § 15-20-1108(e).

112. Arkansas certified planners are required to report soil and litter test results and myriad field-specific application site information, identify applicable BMPs, and develop appropriate litter application rates based on detailed “calculations, assumptions, interpretations, and narrative description demonstrating appropriate application of the Phosphorus Index.” 138-00-022 Ark. Code R. § 2203.3(B)(3)(j), 2204.3(B)(4)(j); *see* Tr. at 9499:4-9500:21 (Smith); *see, e.g.,* Ok. Exs. 2712, 6536, 6537, 6538 (Arkansas NMPs).

113. As defined by the NAPLUA, the Arkansas Phosphorus Index is “the risk-based assessment tool referenced in Nutrient Management Plans developed to govern the terms and

(continued from previous page)

also 138-00-022 Ark. Code R. § 2201 app. B. The protective rate—developed by the University of Arkansas to “provide[] for proper crop utilization and prevention of significant impact to waters within the state,” Ark. Code Ann. § 15-20-1103(17)—was implemented by Arkansas on an interim basis in order to regulate litter application by persons awaiting the issuance of NMPs. *See* Tr. at 9495:23-9497:7, 9514:7-9515:20 (Smith). The revised regulations only permit applications at the protective rate for commercial fertilizers. *See* DJX8133 (revised §§ 2202.4, 2202.5).

conditions under which Nutrients may be land-applied.” ANRC § 2201.4(B) (citing P.A. Moore, A.N. Sharpley, W. Delp, B. Haggard, T. Daniel, K. VanDevender, A. Barber and M. Daniels: *The Revised Phosphorus Index* (2009)).

114. Arkansas is one of as many as forty-eight States that use a Phosphorus Index to manage nutrient application in nutrient surplus areas. Tr. at 9500:22-9501:11 (Smith); 10930:6-15 (Sullivan). The USDA NRCS recognizes the Phosphorus Index as one of the approaches or options a State may use to manage nutrient application. Tr. at 9502:1-24 (Smith).

115. The Arkansas Phosphorus Index was developed by University of Arkansas soil scientists as “a risk-based calculation [focused] on being able to reduce the risk of runoff ... from a farm,” by allowing the plan writers “to look ... at a suite of things in developing a Nutrient Management Plan.” Tr. at 9499:4-9500:21 (Smith). In addition to focusing on soil test phosphorus, the Arkansas Phosphorus Index inputs risk factors based upon “the uniqueness of the individual's land,” including the “soil types, “the topography of the land,” the “slopes of the land,” and any “best management practices” to be incorporated into the plan. *Id.* (Smith); *see* Tr. at 10878:4-15, 10939:13-10940:1 (Sullivan). The Arkansas Phosphorus Index evaluates not just the presence of phosphorus in agricultural soils or in poultry litter but also the potential for the transport of that phosphorus to nearby waters depending upon the unique characteristics and location of the land where poultry litter usage is proposed. Tr. at 10878:4-15, 10939:13-10940:1 (T. Sullivan). Based upon all these factors, the Phosphorus Index computes a numerical risk factor that controls whether and to what extent nutrients may be applied to the individual field or pasture. Tr. at 10879:13-25 (Sullivan); *see also* Tr. at 9500:18-21 (Smith).

116. The ANRC recently issued revised Rules Governing the Arkansas Soil Nutrient and Poultry Litter Application and Management Program, 138-00-022 Ark. Code R. § 2201.1, *et*

seq., effective January 1, 2010. *See* DJX8133 (revised Reg. 2201.1, *et seq.*); Tr. at 9537:14-9538:3 (accepting judicial notice of revised rules). This included a modified Arkansas Phosphorus Index. Specifically, in Section 2201.4(B), the ANRC adopted “The Revised Phosphorus Index” to govern the terms and conditions under which Nutrients may be land-applied. 138-00-022 Ark. Code R. § 2201.4(B); *see* DJX8133 (Revised Phosphorus Index); Tr. at 9537:14-9538:3 (judicial notice of Revised Phosphorus Index).

117. The Revised Phosphorus Index was developed by soil scientists at the University of Arkansas, including Dr. Andrew Sharpley (currently with USDA and University of Arkansas) and Dr. Tommy Daniels (University of Arkansas). *See* DJX8133. Dr. Sharpley and Dr. Daniels are both recognized as leading national experts on the factors affecting the movement of phosphorus in agricultural settings. Tr. at 6323:9-15 (Engel).

118. Earl Smith, Chief of ANRC’s Water Management Division, testified that the revisions allow the Arkansas regulators to “get into the newest scientific work that the university has done and allow us to capture those type things, to revise our index to the state-of-the-art, if you will, as far as the science is going today.” Tr. at 9523:16-22 (Smith); *see also* DJX8132.

119. ANRC has devoted substantial resources to ensuring that the rules and regulations governing the use of poultry litter in IRW are followed. ANRC employs or contracts with nineteen (19) trained professionals to prepare NMPs and inspect poultry growing operations in the IRW. Tr. at 9540:16-41:23 (Smith).

120. In sum, the State of Arkansas expressly authorizes the land application of poultry litter in compliance with the instructions and application rates set forth in NMPs / PLMPs, both of which are drafted, issued and approved by agents acting on behalf of the State.

121. ANRC is not aware of any instances in which a grower associated with any Defendant has caused pollution to waters in the IRW. *See* Tr. at 9611:22-9612:1 (Smith).

122. The State presented no evidence of any litter application in the Arkansas portion of the IRW causing pollution to waters of the IRW. *See* Tr. at 9611:22-9612:1 (Smith).

B. Conclusions regarding the Oklahoma and Arkansas Poultry Litter Statutes and Regulations

123. Based on the foregoing, the Court finds that, by definition, an AWMP is an authorization to apply poultry litter in a manner designed to be protective of the waters of the State. *See* 2 Okla. Stat. § 10-9.1(B)(1) (“‘AWMP’ means a written plan that includes a combination of conservation and management practices *designed to protect the natural resources of the state* as required by the State Department of Agriculture pursuant to the provisions of ... this act.”) (emphasis added). Oklahoma’s enforcement regulations further confirm that compliance with AWMPs equates to compliance with the law as it pertains to application of poultry litter. *See* Okla. Admin. Code §§ 35:17-5-10.1(2)(H), (I) (“Violation points system”) (regulatory enforcement action is taken *only* as a result of the “[f]ailure by a poultry feeding operation to utilize or comply with Best Management Practices or the Animal Waste Management Plan”).

124. The Court rejects the State’s position that AWMPs are merely “guidance documents,” Tr. at 8701:23-8702:6 (mid-trial hearing on Rule 52(c) motions), an argument that is inconsistent with both the plain language of the relevant laws and the evidence presented at trial. The State of Oklahoma expressly authorizes the land application of poultry litter pursuant to the instructions and application rates set forth in AWMPs drafted, approved, and issued by agents acting on behalf of the State.

125. Oklahoma asserts that it has no authority to act with regard to Arkansas. But the only evidence in the record regarding Arkansas indicates that it, as does Oklahoma, authorizes the land application of poultry litter when such application is made in compliance with the instructions and application rates set forth in NMPs and/or PLMPs, and therefore in a manner deemed to be protective of the environment. The State adduced no evidence to show that the Arkansas scheme is not protective of the environment, or inappropriately implemented.

C. Application of Oklahoma and Arkansas's Poultry Litter Regulatory Schemes to the State's Claims

126. For the reasons set forth below, the comprehensive regulatory litter management programs operated by Oklahoma and Arkansas—and Defendants' and Growers' reliance thereon—require dismissal of the State's remaining state law claims.

1. Oklahoma's State Common Law Claims for Nuisance and Trespass Involve Conduct Authorized or Consented to by State Law

127. The State alleges a public nuisance under Oklahoma state law. *See* Pretrial Order at 2; SAC ¶¶97-107. Under Oklahoma law, a nuisance “is a class of wrongs which arises from an unreasonable, unwarranted, or unlawful use by a person or entity of property lawfully possessed, but which works an obstruction or injury to the right of another.” *Briscoe v. Harper Oil Co.*, 702 P.2d 33, 36 (Okla. 1985). To demonstrate a nuisance, the State must prove that each Defendant (1) unlawfully performed an act, or omitted to perform a duty; and (2) that this act or omission either: (a) annoys, injures or endangers the comfort, repose, health, or safety of others; (b) offends decency; (c) unlawfully interferes with, obstructs or tends to obstruct, or renders dangerous for passage, any lake or navigable river, stream, canal or basin, or any public park, square, street or highway; or (d) in any way renders other persons insecure in life, or in the use of property. *See* 50 Okla. Stat. § 1.

128. The State separately alleges a trespass upon “Oklahoma’s possessory property interest in the water in that portion of the [IRW] located within the territorial boundaries of the State of Oklahoma which runs in definite streams, formed by nature, over or under the surface.” Pretrial Order at 2; SAC ¶119. Trespass requires “an actual physical invasion of the real estate of another without the permission of the person lawfully entitled to possession.” *Bennett v. Fuller*, 2008 U.S. Dist. LEXIS 58198, at *16 (N.D. Okla. July 31, 2008) (Frizzell, J.).

129. The Court ruled previously that the State’s state law nuisance claim is limited to conduct occurring within the State of Oklahoma. *See* Aug. 18, 2009 Hrg. Tr. at 188:7-11 (Dkt. No. 2548) (Aug. 31, 2009). As discussed *infra*, the same rule restricts the State’s trespass claim to conduct in occurring Oklahoma.

130. Oklahoma law is clear that the State may not maintain a nuisance claim against conduct that was authorized by state law.¹³ *See* 50 Okla. Stat. § 4 (“Nothing which is done or maintained under the express authority of a statute can be deemed a nuisance.”); *Miller v. Mayor of New York*, 109 U.S. 385, 395 (1883); *Carson Harbor Village v. UNOCAL Corp.*, 270 F.3d 863, 870 (9th Cir. 2001) (en banc); *City of Columbus v. Union Pac. R.R.*, 137 F. 869, 872 (8th Cir. 1905); *Piggott v. Eblen*, 366 S.W.2d 192, 195-96 (Ark. 1963); *McKay v. City of Enid*, 109 P. 520, 521 (Okla. 1910) (authorization by the State to conduct a particular business or industry relieves the company “from liability to suit, civil or criminal, at the instance of the government”); *see also B.H. v. Gold Fields Mining Corp.*, 506 F. Supp. 2d 792, 805 (N.D. Okla. 2007) (private plaintiff, not government, may seek damages under a nuisance theory for conduct authorized by law) (citing *E. I. Du Pont De Nemours Powder Co. v. Dodson*, 150 P. 1085 (Okla.

¹³ The State presented no evidence regarding litter applications in the Oklahoma portion of the IRW prior to the enactment of the RPFOA in 1998.

1915)).¹⁴ Here, the State’s consent is expressed through the terms and conditions of AWMPs issued pursuant to the RPFOA’s legislative scheme and ODAFF regulations.

131. In Oklahoma, “a trespasser is one who enters upon the property of another without any right, lawful authority, or express or implied invitation, permission, or license.” *Williamson v. Fowler Toyota, Inc.*, 956 P.2d 858, 862 (Okla. 1998); *see also* Restatement (Second) of Torts § 158 cmt. e (1965) (“Conduct which would otherwise constitute a trespass is not a trespass if it is privileged. Such a privilege may be derived from the consent of the possessor, or may be given by law because of the purpose for which the actor acts or refrains from acting.”) (internal citations omitted).

132. There can be no claim for trespass given either (1) the consent of the owner, or (2) authorization by law to engage in the conduct in question. *See, e.g., Fowler Toyota*, 956 P.2d at 862; Restatement (Second) of Torts § 892A (“One who effectively consents to conduct of another intended to invade his interests cannot recover in an action of tort for the conduct or for harm resulting from it.”); *see also Butler v. Pollard*, 800 F.2d 223, 226 (10th Cir. 1986) (“Consent from the owner of land is a valid defense to an action of trespass for acts done within the scope of the license.”) (citing *Antonio v. General Outdoor Adver. Co.*, 414 P.2d 289, 291 (Okla. 1966)).¹⁵ Similarly, conduct pursuant to “authority ... created by legislative enactment”

¹⁴ Under Oklahoma law, “agricultural activity” (including raising poultry) conducted on farm or ranch land and “undertaken in conformity” with applicable laws and regulations is “presumed to be [a] good agricultural practice and not adversely affecting the public health and safety.” 50 Okla. Stat. §§ 1, 1.1(B).

¹⁵ *See also* Restatement (Second) of Torts § 892 (“Consent is willingness in fact for conduct to occur. It may be manifested by action or inaction and need not be communicated to the actor.”); *id.* § 167 (“The rules stated in §§ 892-892D as to the effect of consent to the actor’s conduct apply to entry or remaining on land.”).

cannot be the basis of an invasion of land constituting a trespass. Restatement (Second) of Torts § 211.¹⁶

133. The Oklahoma statutes, regulations, code, and plans discussed above make clear that within the State of Oklahoma poultry litter applied pursuant to an AWMP is done so with the approval and authorization of the State. The State of Oklahoma may not in turn, therefore, maintain a nuisance or trespass claim based on conduct under those authorities.

2. State Statutory Claims

134. The State also alleges violations of 27A Okla. Stat. § 2-6-105 and 2 Okla. Stat. § 2-18.1, two general anti-pollution Oklahoma statutes, which impose liability on person(s) that “cause pollution” or “place or cause to be placed any wastes in a location where they are likely to cause pollution.” Pretrial Order at 2; SAC at ¶¶127-131.

135. In order to prevail under Count 7, the State must demonstrate that Defendants have: (i) “cause[d] pollution of any waters of the state,” 27A Okla. Stat. § 2-6-105(A); 2 Okla. Stat. § 2-18.1(A); or (ii) “place[d] or cause[d] to be placed any wastes in a location where they are likely to cause pollution of any air, land or waters of the state,” 27A Okla. Stat. § 2-6-105(A).

136. 27A Okla. Stat. § 2-6-105(A) defines “pollution” as

the presence in the environment of any substance, contaminant or pollutant, or any other alteration of the physical, chemical or biological properties of the environment or the release of any ... substance into the environment *in quantities which are or will likely create a nuisance* or which render or will likely render the environment harmful or

¹⁶ See Restatement (Second) of Torts § 211 cmt. a (“The duty or authority dealt with in this Section may be created or conferred by statute, ordinance, or order enacted or made in pursuance of legislative action.”); *id.* at cmt. c (“The legislative duty or authority carries with it a privilege to enter land in the possession of another if it is reasonably necessary to do so in order to perform the duty or exercise the authority.... Such a privilege of entry may also arise by implication.”); *id.* at cmt. d (“Whether the actor is a public official or a private person is immaterial to the existence of the privilege.”).

detrimental or injurious to public health, safety or welfare, or to domestic, commercial, industrial, agricultural, recreational, or other *legitimate beneficial uses*, or to livestock, wild animals, birds, fish or other aquatic life, or to property.

27A Okla. Stat. 2-1-102(12) (emphases added).

137. Oklahoma’s general environmental statutes apply to the release of any substance “in quantities which are or will likely create a nuisance” or impair some beneficial use. Under this standard, the State must present proof that the handling or land application of litter by Defendants or their agents has resulted in a release of phosphorus in quantities which would violate the law. The release of an iota of phosphorus is not enough. These statutes must be read consistent with the intent of the legislature, *Russell v. Chase Inv. Servs. Corp.*, 212 P.3d 1178, 1185 (Okla. 2009); *In re Estate of Jackson*, 194 P.3d 1269, 1273 (Okla. 2008), which is:

to provide that no waste or pollutant be discharged into any waters of the state or otherwise placed in a location likely to affect such waters *without first being given the degree of treatment or taking such other measures as necessary to protect the legitimate beneficial uses of such waters.*

27A Okla. Stat. § 2-6-102 (emphasis added).

138. These laws do not impose an impossible injunction against any constituent ever reaching the waters of the State but rather require taking measures to ensure that litter handling does not adversely impact the legitimate beneficial uses of the waters of the State. As ODAFF states, that is precisely the purpose of the Poultry Act and its regulations, to “assist in ensuring beneficial use of poultry waste while preventing adverse effects to the waters of the state of Oklahoma.” OAC § 35:17-5-1. Conduct in compliance with the Poultry Act and regulations cannot give rise to a claim under 27A Okla. Stat. § 2-6-105 and 2 Okla. Stat. § 2-18.1.

139. This interpretation is consistent with *Carson Harbor Village, Ltd. v. Unocal Corp.*, 270 F.3d 863 (9th Cir. 2001) (en banc). In *Carson Harbor*, the plaintiff alleged that defendants (public water utilities) had discharged storm water containing pollutants onto the

plaintiff's property. *See id.* at 869-70. The Ninth Circuit affirmed the lower court's summary judgment dismissal of the claims because defendants' storm water discharges containing pollutants were authorized by permits issued by the State. *See id.* at 870 ("Because [plaintiff] failed to show that the [utilities] violated the NPDES permits ... any pollutants discharged into the storm water were permissible."). Just as the permits in *Carson Harbor* constituted legal authorization to perform the regulated activity, the AWMPs that are issued and approved by the State of Oklahoma constitute legal authorization for the land application of poultry litter in accordance with the specific instructions contained therein.¹⁷ *See Carson Harbor*, 270 F.3d at 870.

140. The State's contrary interpretation would render the provisions so vague as to deprive them of meaning in violation of the Due Process Clause of the Fourteenth Amendment. *United States v. National Dairy Prods. Corp.*, 372 U.S. 29, 32-33 (1963); *see Connally v. General Constr. Co.*, 269 U.S. 385, 393 (1926); *see also Champlin Refining Co. v. Corporation Comm'n*, 286 U.S. 210, 223 n.1, 242-43 (1932) (striking down similar Oklahoma provision prohibiting the production of "waste").

141. In the State's view, Growers must comply fully with the terms of their AWMPs, which set forth the conditions under which they may apply designated amounts of poultry litter, but must also comply with certain other unspecified requirements to prevent not only the discharge of poultry litter to the waters of the state but the propagation of *any* constituent property of poultry litter as that litter decomposes in the soil. In short, above and beyond diligent

¹⁷ A "permit" is merely "a certificate evidencing permission; a license." *Black's Law Dictionary*, 1176 (8th ed. 2004). AWMPs and NMPs clearly constitute certificates evidencing permission from the States to apply poultry litter to specific lands in the IRW.

compliance with their State-issued, site-specific plans, the State expects Growers to be part soil scientist and part weatherman.¹⁸ The invocation of penalties in such circumstances violates the “fair notice” requirement of the Due Process Clause. *See Champlin*, 286 U.S. at 242-43. To avoid that result, the State’s interpretation must be rejected. *See Public Citizen v. Department of Justice*, 491 U.S. 440, 465-66 (1989); *Edward J. DeBartolo Corp. v. Florida Gulf Coast Bldg. & Constr. Trades Council*, 485 U.S. 568, 575 (1988).

142. Separately, to accept the State’s interpretation would render meaningless the balance of Oklahoma’s specific statutes and regulations governing—and approving—the application of poultry litter. The law is clear that “[a] specific statute will control over a conflicting general statute on the same subject.” *Russell*, 212 P.3d at 1185. Indeed, “[l]egislative acts are to be construed in such manner as to reconcile the different provisions and render them consistent and harmonious, and give intelligent effect to each.” *Id.* (quoting *Eason Oil Co. v. Corp. Comm’n*, 535 P.2d 283, 286 (Okla. 1975); see also *Crawford Fitting Co. v. J.T. Gibbons, Inc.*, 482 U.S. 437, 445 (1987) (“[W]here there is no clear intention otherwise, a specific statute will not be controlled or nullified by a general one, regardless of the priority of enactment.”) (quotations, emphasis omitted). Here, Oklahoma’s general anti-pollution injunctions must give way before Oklahoma’s much more specific litter application regime.

3. Federal Common Law Nuisance

143. Third, the State alleges a federal common law nuisance claim. To the extent this claim lies at all, *cf. infra*, ¶¶ 330-344, such claims are guided by the principles set forth in the Restatements. *See American Elec. Power*, 582 F.3d at 327-28 (gathering authority and

¹⁸ The State’s own expert could not even identify the levels of phosphorus that would constitute “pollution” as defined by these statutes. *See Tr.* at 2531:21-2534:2 (Fisher).

concluding that it “appl[ied] the Restatement definition of public nuisance to the federal common law of nuisance and demonstrate[d] that it provides a workable standard”). The Restatement (Second) of Torts defines public nuisance as an “*unreasonable interference* with a right common to the general public.” § 821B (1977) (emphasis added).

144. Courts are understandably cautious about declaring activity undertaken as part of a regulatory scheme to be a nuisance. “[I]f there has been established a comprehensive set of legislative acts or administrative regulations governing the details of a particular kind of conduct, the courts are slow to declare an activity to be a public nuisance if it complies with the regulations” Restatement (Second) of Torts § 821B cmt. f. Similarly, in considering a nuisance in this context, courts should credit “the fact that acts were taken in reliance upon legislation.” *Id.*

145. The record before the Court does not sustain the conclusion that Defendants acted unreasonably. As set forth above, poultry litter is land applied in the IRW pursuant to detailed state regulatory schemes developed consistent with prevailing scientific understanding of phosphorous transport and pursuant to field-specific management plans designed to limit to the maximum extent possible the movement of phosphorous from pastures to streams.

146. The record shows that Growers in the IRW obtain and abide by these plans. Tr. at 3856:24-3857:20, 3864:9-15 (referring to DJX4061) (Pigeon); 3922:24-3923:2 (Collins); 4099:10-4104:13, 4116:19-4117:8 (discussing DJX3051) (Anderson); 4588:5-25, 4605:6-18 (Saunders); *see also, e.g.*, DJX0001, DJX3051, DJX3480, Ok. Ex. 2875C, Ok. Ex. 4061. And, the record shows that Defendants relied on Oklahoma and Arkansas technical experts and soil scientists to implement the respective State’s litter laws and to gauge the appropriate application

of poultry litter on a site-specific basis. *See supra* ¶74. Under such circumstances the Court cannot conclude that Defendants acted unreasonably or unlawfully in trusting in those plans.

147. In response, here and elsewhere, the State argues that Defendants have long been aware that the use of poultry litter causes environmental injury, and therefore acted unreasonably in the face of a foreseeable injury.

148. The record establishes that scientists' understanding of nutrient fate and transport and environmental impact has evolved steadily over the past several decades. However, the uncontested record, supported by the State's own agronomist, is that well into the 1990s, the principal nutrient of concern among soil scientists was nitrogen, not phosphorous. In response to the Court's questioning, Dr. Gordon Johnson conceded that "[t]he initial concern was nitrogen and then several studies showed that that wasn't as widespread of a problem, and then there was more concern about these high levels of phosphorus. That happened really in the late 1990s." Tr. at 4994:25–4996:6; *see also* 4025:2–25, 4020:3–4021:9; 4023:8–15 (D. Henderson: addressing the uncertainties as the science of phosphorus as a water quality issue developed); *see also* Tr. at 2894:16–25 (Gunter: characterizing concern over phosphorous as an "emerging issue" in the mid- to late-1990s); 9481:20–24 (Earl Smith stating that in the 1980's and early 1990s "the governing parameter [in water quality issues relating to poultry litter] was nitrogen by and large"); Tr. at 4959:15–4961:16 (Tim Alsup testifying that in the early 1990s scientists' concern relating to best management practices was nitrogen); Ct. Ex. 1 (Blake Dep.), at 96:21–97:4, 98:3–101:11 (John Blake testifying that the science relating to poultry litter has evolved and that the poultry litter regulations of Arkansas and Oklahoma have evolved along with it).

149. As scientists' understanding of nutrient transfer evolved, so did Defendants'. *See* Ct. Ex. 11 (Edwards Dep.), at 194:6–21 (stating that industry was interested in having some

numbers and data); 4249:6-4252:21 (Rutherford) (company did not have its “head stuck in the sand” and had been working with state and federal agencies to address environmental issues); Tr. at 4133:25-4134:34 (Simmons) (company involved in starting and participating in Governor’s Task Force). During that same period, as soil scientists’ and the Defendants’ understanding of the processes at work evolved, various Defendants came to understand and acknowledged that poultry litter had the potential to contribute to negative impacts on water quality *if improperly managed*. Tr. at 3064:10-3065:14 (M. Henderson); Tr. at 4883:12-4884:10; 4892:20-25 (Tim Alsup testifying that “I agree that if litter is not managed, there could be an increase in – an increased risk in water quality.”); 3325:13-17 (Keller: “I understood, without proper management, [phosphorous] could be an issue.”).

150. The Oklahoma poultry litter regulations were adopted shortly after the scientific community identified phosphorus as an issue of concern in animal manures. *See* Tr. at 2891:17 – 2895:7 (Teena Gunter testifying that phosphorus was “an emerging issue” in 1997 and that as science uncovered phosphorus concerns that information became the basis for Oklahoma’s regulations). Thus, the facts do not show a significant period when the Defendants or poultry Growers could have had knowledge in the possession of the scientific community and failed to act on it.

151. The record also demonstrates Defendants’ involvement in developing and promoting poultry litter management methods designed to protect the environment. Tr. at 4893:7–4894:2; 4959:15-4962:1; 4962:21–4964:1; 4964:22-4966:7 (Alsup); Tr. at 4176:1-18 (Simmons); 4251:10-4252:21 (Rutherford); 9518:13-25 (Smith); Cargill Ex. 6. For example, Defendants encouraged Growers to secure animal waste management plans voluntarily, before they were required by law. Tr. at 4858:25-4859:6, 4893:7–4894:2, 4964:22-4966:7 (Alsup) (Tim

Alsup testifying that Cargill encouraged its Arkansas contract Growers to attend educational meetings and urged them to voluntarily comply with Oklahoma's standards.); 3334:6-11 (Keller: discussing Ok. Ex. 3207); 4175:10-25 (Simmons); 4779:13-21 (Maupin); 4822:12-4823:1, 4842:10-22 (Houtchens); 3117:21-3118:4 (M. Henderson); 4313:21-24, 4314:14-19 (McClure). Cargill Ex. 6. *See also* Tr. at 9518:7-25 (Smith: Defendants supported enactment of the nutrient management statutes in Arkansas).

152. In light of the state regulatory schemes in place in Oklahoma and Arkansas, and the lack of evidence that reliance on those schemes is unreasonable, the record does not establish that poultry farmers and the Defendants with whom they contract have acted unreasonably. Therefore, the State's claim for federal common law nuisance fails.

III. CAUSATION

153. Causation has been the subject of extensive and detailed expert testimony from both the State and Defendants.¹⁹ The State alleges that phosphorous contained in land-applied poultry litter runs off fields throughout the IRW and finds its way to rivers, streams, and groundwater where it injures water quality or aquatic populations, and may endanger human health. Defendants dispute that the State has met its burden to prove that phosphorous from land applications of poultry litter for which Defendants are responsible reaches the waters in the Oklahoma portion of the IRW used for recreation or drinking water in quantities or a form sufficient to result in any of the State's alleged injuries.

A. Legal Standard for Causation

¹⁹ Tr. at 5960:11-13 (Court noting that fate and transport is a central issue in this case); 5969:22-5970:10 (same); 11337:9-13 (same).

154. Causation is a necessary element of each of the State's claims. The parties, however, dispute the appropriate legal measure of causation.

155. The State argues first that it need prove only that Defendants contribute phosphorous into the watershed, and that phosphorous in the watershed results in injury. *See* Tr. at 8576:25-8577:2; State's Pre-Trial Br., Dkt. No. 2627, at 18. But the alleged wrong in this case is not injury to the *watershed*, but rather injury to the *waters* in the Oklahoma portion of the IRW used for recreation or drinking water. The mere fact that phosphorous enters the watershed does not mean that it results in or contributes to water quality injury. *See* Tr. at 9038:4-9039:2 (Connolly); 10660:25-10662:2 (Sullivan).

156. The Tenth Circuit's prior opinion in this case necessarily rejects so loose a causation standard. *See Tyson Foods*, 565 F.3d 769. There, the Circuit made clear that the State bears the obligation of proving that an alleged contaminant from poultry litter applications (for which each Defendant was legally responsible) actually reaches the relevant waters of the state and contributes to an actual or threatened injury. *Id.* at 778. Thus, the Circuit found significant the State's failure to account for alternative sources, that poultry litter is applied in such a manner as to minimize the complained-of impact, and the State's failure to assess the contaminant's "fate and transport" characteristics to establish whether it could have contributed to the alleged injury. *Id.* To accept the State's "phosphorous into the watershed only" standard would render these inquiries meaningless.

157. Second, the State argues that because the alleged injury is single and indivisible, it need not demonstrate Defendant-specific causation. *See, e.g.,* State's Trial Br., Dkt. No. 2627, at 17-18. It is true that phosphorous in a river cannot be disaggregated by source. As Ms. Phillips testified, "[w]hen the phosphorus is in the river, it doesn't have a logo on it that tells you where it

came from.” Tr. at 1492:5-13. However, this does not excuse the State from proving causation as to each individual Defendant.²⁰

158. The authorities the State cites regard the doctrine of concurrent tortfeasors, which is not a doctrine of causation but rather a means of apportioning damages. As the Supreme Court of Oklahoma explained in *Kirkpatrick v. Chrysler Corp.*,

[t]ortfeasors are classified as concurrent tortfeasors when their independent acts concur to produce a single or indivisible injury. *Brigance v. Velvet Dove Restaurant*, 756 P.2d 1232, 1233 (Okla.1988). In other words ... in the case of concurrent tortfeasors ... concert is lacking, but a single or indivisible injury or harm is nonetheless produced. Notwithstanding the lack of concerted action and even though the act of one may not have alone caused the injury or brought about the result, it has long been recognized in Oklahoma that concurrent tortfeasors, like joint ones, are each responsible for the entire result if the plaintiff is free from negligence.

920 P.2d 122, 126 (Okla. 1996). While concurrent tortfeasors may be held jointly and severally liable for a damages award (subject to limitations not relevant here), this merely begs the question as to who is a tortfeasor in the first instance.

159. As to that question, Oklahoma law is clear that even with regard to alleged concurrent tortfeasors, the State must still prove causation as to each individual Defendant. Under such circumstances, “the plaintiff has the burden of presenting sufficient evidence to prove to the jury *that each defendant’s act was a contributing factor* in producing the plaintiff’s injuries.” *Johnson v. Ford Motor Co.*, 45 P.3d 86, 91 (Okla. 2002) (emphasis added); *see also Lee v. Volkswagen of Am., Inc.*, 688 P.2d 1283, 1289 (Okla. 1984) (plaintiff must prove that each Defendant’s conduct was a contributing factor in the plaintiff’s injuries).

²⁰ Counsel for the State acknowledged the State’s obligation to prove Defendant-specific causation at the pre-trial hearing. “We need to prove the case against each of them.... [W]e’ve got to prove the case against each one of them, not against all of them together, albeit both the defense and the prosecution have a number of common issues as to all defendants.” *See* Sept. 3, 2009 Hrg. Tr. at 59:4-10.

160. This rule is consistent with blackletter causation principles. As the Supreme Court of Missouri explained:

In all tort cases, the plaintiff must prove that each defendant's conduct was an actual cause, also known as cause-in-fact, of the plaintiff's injury:

Any attempt to find liability absent actual causation is an attempt to connect the defendant with an injury or event that the defendant had nothing to do with. Mere logic and common sense dictates that there be some causal relationship between the defendant's conduct and the injury or event....

City of St. Louis v. Benjamin Moore & Co., 226 S.W.3d 110, 113-14 (Mo. 2007) (per curiam) (rejecting a similar industry-wide nuisance claim) (internal quotations omitted).

161. This rule obtains in environmental and toxic tort cases such as this. In *Herd v. ASARCO Inc.*, 2003 U.S. Dist. LEXIS 27381 (N.D. Okla. July 11, 2003), *vacated in part on other grounds*, 2004 U.S. Dist. LEXIS 30673 (N.D. Okla. Jan. 13, 2004), for example, this Court rejected the plaintiff's argument, similar to the claim advanced here, that proving a Defendant's mere presence was enough to show causation. "The Court simply rejects this argument that any defendant who emitted lead-laden particles, no matter the distance from Picher or the concentration of the particles, is subject to suit in this case." *Id.* at *43-44. Instead, the Court held that, just to survive summary judgment, "Plaintiffs must ... create a genuine issue of material fact as to whether each individual Defendant contributed to the alleged nuisance." *Id.*; *see also Moore v. Texaco, Inc.*, 244 F.3d 1229, 1231-32 (10th Cir. 2001) (rejecting similar claim as "flirt[ing] with ... 'res ipsa loquitur'").²¹

²¹ The State's federal common law nuisance claim also requires a showing that each defendant contributed to the harm alleged. The Restatement's "substantial factor" test governs causation under the federal common law of nuisance. *See Connecticut v. American Elec. Power Co.*, 582 F.3d 309, 345 (2d Cir. 2009); *Artesian Water Co. v. Government of New Castle County*, 659 F. Supp. 1269, 1283 (D. Del. 1987), *aff'd*, 851 F.2d 643 (3d Cir. 1988).

162. Applying these standards to this case, the State bears the burden of proving for each of its state law claims that each individual Defendant was a contributing factor to the injuries the State alleges. It is not sufficient to prove that a Defendant merely did business in the watershed. There is no market share liability or Defendant class in this case. See *Wood v. Eli Lilly & Co.*, 38 F.3d 510, 513-14 (10th Cir. 1994); *Case v. Fibreboard Corp.*, 743 P.2d 1062, 1067 (Okla. 1987). Instead, the State must prove that each Defendant is responsible for conduct that contributed to some identifiable injury to relevant waters in the Oklahoma portion of the IRW.

B. Water Quality in the IRW

163. The State alleges various injuries to IRW waters. Although the evidence is not entirely uniform on this issue, the record is sufficient to establish that some aspects of water quality have declined over the past several decades in the IRW.²²

164. Increasing nutrient levels with associated algae growth and declining water clarity have been reported in some IRW waters for a number of years. Tr. at 1203:24-1204:12 (Phillips). The evidence demonstrated instances of elevated phosphorous in some rivers and streams in the IRW as compared to reference samples and Oklahoma's not-yet-effective Scenic River criterion Standard. Tr. at 5375:5-5376:4 (Olsen); Tr. at 7015:6-7016:13 (Stevenson).

²² There is some evidence in the record to suggest that during the past decade phosphorus levels in the Illinois River and Lake Tenkiller have declined and water quality has improved, concurrent with upgrades and improvements to a number of WWTPs allowing them to better remove phosphorus from their discharges. See Tr. at 2672:15-2674:6 (Fisher); 7565:10-7567:8 (Cooke); 9096:11-9100:10; 9112:9-9116:8 (Connolly); DJX6078; DJX6160. The Court lacks sufficient evidence to determine whether these improvements in water quality are sufficient to constitute a "trend" of reducing phosphorus levels in IRW waters.

165. The State’s study of streams in the Illinois River showed that during the peak algal growth season, median filamentous green algae (“FGA”) cover in the streams and rivers sampled by the State is approximately is 20 percent. Tr. at 7038:6-15, 7039:1-5 (Stevenson).²³ Defendants’ expert Dr. John Connolly also noted some water quality impacts in the riverine portion of Lake Tenkiller. Tr. at 9115:15-9116:8 (Connolly). And, the State presented evidence that dissolved oxygen levels in Lake Tenkiller have resulted in a habitat “squeeze” for certain cool-water species. Tr. at 7776:4-7 (Welch).

166. The 2007 Streams Report of the Oklahoma Beneficial Use Monitoring Program (BUMP Report) identifies the four segments in the IRW designated as Scenic Rivers—Barren Fork, Flint Creek, Illinois River (US 59, Watts), and Illinois River (US 62, Tahlequah)—as showing nonsupport of the “aesthetics: beneficial use based upon the not-yet-applicable 0.037 mg/L phosphorus criteria.” *See* Ok. Ex. 5594 at x-xiii; Tr. at 3598:21-3600:3, 3601:20-3604:13, 3606:19-3607:2 (Strong). Segments of the Illinois River, Barren Fork, and Flint Creek have also been designated as not supporting the “aesthetics” beneficial use in reports prepared pursuant to Section 303(d) of the Clean Water Act. *See* Ok. Ex. 3284 at C-9; Ok Ex. 6008 at C-15 to C-16; Tr. at 392:15-394:3 (Tolbert); 3486:3-21, 3489:6-3490:12 (Strong).

167. The record regarding the extent and severity of environmental injury in the IRW is mixed. The lacustrine (the “lake-like” section, as distinct from the “riverine” or “river-like”) portion of Lake Tenkiller, which comprises most of the water of the lake by volume and is heavily used by recreators, does not on average show elevated levels of chlorophyll-a, thus indicating the lack of significant algal growth. Tr. at 9115:15-9116:8 (Connolly). Phosphorus

²³ The State’s sampling included numerous small tributaries, for which the State adduced no proof of recreational or drinking water use. Tr. at 5446:18-5447:8 (Olsen)

levels in the lacustrine portion of Lake Tenkiller are comparable to or lower than phosphorus levels in the lacustrine portion of reservoirs throughout Missouri. Tr. at 10626:18-10633:4 (Sullivan); DJX2275. Phosphorous concentrations in Lake Tenkiller are also comparable to levels recorded in lakes across Missouri, Kansas, Iowa, Nebraska, and the southern part of Minnesota, including lakes in the same eco-region. Tr. at 10633:10-10637:12 (Sullivan). Dissolved oxygen levels in Lake Tenkiller, particularly in the bottom layers, are regularly depleted during summer months, Tr. at 6710:11-17 (Wells), but dissolved oxygen levels in the Illinois River largely meet the State dissolved oxygen standards. Tr. at 9111:6-11 (Connolly). However, the State's BUMP report does classify Lake Tenkiller as eutrophic, along with lakes across Oklahoma. DJX6147.

168. Benthic algae density levels in the Scenic River portions of the Illinois River, where recreation is concentrated, are mostly below the EPA "nuisance" value of 0.015 mg chlorophyll-a/L, and frequently below 0.010 mg/l. Tr. at 9107:6-9108:17 (Connolly); DJX6121. Finally, the fish and wildlife beneficial use is supported in the IRW's scenic river segments and is graded at the highest categorical ranking for Oklahoma waters. Tr. at 9944:4-10, 9944:23-9945:4 (Chadwick). Defendants' fisheries expert, Dr. Jim Chadwick, testified that fish and wildlife communities in the scenic river segments of the IRW are supported, Tr. at 9945:5-22, and that fish biodiversity and communities are healthy, Tr. at 9959:12-23.

169. As to the effect of declines in water quality, as the State's recreation expert admitted, there is no evidence that water quality issues have impacted the number of recreators. Tr. at 4385:21-25 (Caneday). In fact, recreation levels have not seen any real decline in the IRW, Tr. at 795:24-796:15 (Fite), and certainly not one attributable to any particular cause, Tr. at 4384:18-25 (Caneday).

170. Importantly, there is no credible evidence of any injury or risk of injury to human health associated with phosphorous in the IRW. The State failed to identify any individual sickened by any cause traceable to poultry litter.

171. Cyanotoxins are organic compounds exuded by some species of cyanobacteria that are toxic to other organisms. Not all cyanobacteria produce cyanotoxins. Tr. at 11067:20-11068:1 (McGuire). Ordinary water treatment processes remove cyanotoxins from treated water, and the limited data available for cyanotoxins in IRW waters show that the levels are in any event relatively low. Tr. at 11068:9-23; 11069:18-11070:11 (McGuire). Nor is there evidence of any risk to human health from the presence of cyanobacteria in the IRW. Tr. at 11153:21-11153:25 (H. Gibb). Dr. Michael McGuire demonstrated that drinking water obtained from IRW water sources is of “excellent” quality. Tr. at 11070:6-11 (McGuire).

C. Regional and National Water Quality

172. The mere fact that phosphorous is found at what the State characterizes as “elevated” levels in some waters in the Oklahoma portion of the IRW does not demonstrate that poultry litter, generally, or each Defendant, specifically, contributed meaningfully to those levels. To the contrary, the evidence demonstrates that similar levels are measured in waters across Oklahoma, including in many places that have little to no poultry farming. Tr. at 10608:24-10621:14 (Sullivan); DJX2221; DJX2222; DJX2223; DJX2225; & DJX2234. Oklahoma’s own BUMP survey confirmed that lakes across Oklahoma have water quality comparable to Lake Tenkiller, including in many areas with little to no poultry farming. Tr. at 9120:25-9121:22 (Connolly); DJX2225; DJX6147.

173. The evidence also shows that water quality in the IRW is comparable to water quality regionally and nationally. *See* Tr. at 10595:4-10607:24 (Sullivan). One study of rivers in the same eco-region as the IRW found lower average phosphorous concentrations in other

watersheds than measured in some IRW locations; however, the watersheds surveyed generally had substantially more forest and less urban land use than the IRW. *Id.* at 10603:23-10607:24 (Sullivan); *see* Tr. at 9153:2-8 (Connolly: “true universally” that forested areas generate lower phosphorous concentrations than agricultural areas). Phosphorous levels in Lake Tenkiller are substantially below median levels, and comparable to or lower than concentrations in lakes in the same eco-region. Tr. at 10626:24-10637:12 (Sullivan); DJX2275.

D. Phosphorous Fate and Transport Analysis

174. Contaminants in the environment are often assessed through “fate and transport” analysis. *Tyson Foods*, 565 F.3d at 778. As Dr. John Connolly explained:

Fate and transport is a term of art that’s common in our field. And it refers to all of the physical, chemical and biological processes that affect a pollutant as that pollutant moves from its original source to its final destination, and how those processes interact and how they affect the movement and the ultimate disposition of the pollutant.

Tr. at 8841:24-8842:5. The EPA has issued guidance for contaminant risk assessment, which details the fate and transport processes to be considered. *Id.* at 8842:18-8843:1. The processes of ionization, precipitation, adsorption, complexation, erosion, deposition, weathering, bioaccumulation, biotransformation, food chain transfer, and excretion are all relevant to phosphorous fate and transport. *Id.* at 8845:4-8849:14 (Connolly).

175. Reliable fate and transport analysis requires a quantitative rather than a purely qualitative analysis. Tr. at 8859:18-8860:16 (Connolly). Phosphorous fate and transport analysis should also take into account factors that may retard phosphorous movement such as differences in soils and vegetation. Tr. at 8857:20-8858:15 (Connolly). It must also account for phosphorous speciation as different forms of phosphorous behave differently. Tr. at 8858:16-8859:2; 8894:16-8901:4 (Connolly). For these reasons, assessing phosphorous fate and transport

requires some degree of site specific analysis. Tr. at 8859:1-2; 8862:2-8863:3 (Connolly rejecting Fisher's assertion that phosphorous behaves uniformly throughout the IRW).

176. Fate and transport of nutrients could be assessed in the IRW using traditional field work, targeted sampling, and analysis. Tr. at 8874:12-8875:16 (Connolly). These methods may be used to assess the watershed at both a macro level, and also at the micro, source-specific level. Tr. at 8875:24-8881:17 (Connolly discussing watershed or farm-specific assessment); 10656:18-10658:3 (Sullivan discussing sampling techniques such as up-and-downstream bracketing of potential source locations to evaluate impact); *id.* at 10583:23-10587:15 (Sullivan discussing fate and transport evaluation methods used in the Tillamook Bay Estuary).

177. The State has not offered any fate and transport analysis demonstrating the movement of phosphorous from poultry litter-amended fields to waters used for recreation or drinking water in the Oklahoma portion of the IRW. To the contrary, State expert Dr. Bert Fisher opined that

[b]ecause [poultry] wastes were all similar and the behavior of that waste under the influence of rainfall and gravity is all similar or the same, the waste is fungible, its behavior is fungible, there's no reason to do a site-specific analysis of fate and transport in the Illinois River Watershed. If the waste is put on the ground, it will end up in the streams.

Tr. at 1859:14-1860:1.

178. In this case, the State devoted substantial resources to developing novel "fingerprinting" methodologies. The State's witnesses, Dr. Roger Olsen and Dr. Valerie Harwood, claimed to be able to identify conclusively the presence of contamination from poultry litter in the environment by employing tests based on chemical and biological characteristics supposedly unique to poultry. These methods were novel, untested, and unreliable, and therefore were inadmissible under the factors announced by the Supreme Court in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993). *See* Minute Orders, Dkt. Nos. 2386 & 2387 (July

30, 2009). The Tenth Circuit affirmed this Court's previous ruling to that effect. *Tyson Foods*, 565 F.3d at 779-81. Because of its reliance on these novel methodologies, the State failed to undertake any traditional fate and transport analyses.

179. A necessary first step in fate and transport analysis is assessing potential sources. Tr. at 8849:15-21 (Connolly). In this case, however, the State failed to account for the impact of many other potential sources of phosphorous in the IRW. *See* Tr. at 5407:11-5419:17; 5422:5-5424:1 (Olsen); 10698:5-19; 10708:17-25; 10712:20-10713:1; 10729:2-10 (Sullivan). Instead, the State's sampling and analysis program focused almost exclusively on the land application of poultry litter. *Id.* at 10658:4-19 (Sullivan).

180. The State failed to offer evidence demonstrating whether and to what extent phosphorus moved off poultry litter-amended fields or to what extent any such phosphorous reached waters used for recreation or drinking water in the Oklahoma portion of the IRW. *See* Tr. at 8860:17-24; 8893:5-21 (Connolly); 6457:19-6458:13 (Engel: no State witness will "testify that the phosphorus found in these puddles of standing water sampled by the study was eventually transported to a definite stream or river."); 6503:13-6504:5 (Engel: no site-specific analysis); Tr. at 5448:1-11 (Olsen acknowledging failure to track phosphorous from any particular location to the lake); Tr. at 2535:4-17 (Fisher acknowledging inability to identify a specific contaminated location).

E. Potential Sources of Phosphorous and Impacts on Water Quality

181. The IRW is a patchwork quilt of land uses, replete with potential sources of phosphorous, including, *inter alia*, WWTPs, urban runoff, sewage bypasses, septic systems, cattle and other livestock, wildlife, commercial fertilizer, construction and other human activities, and erosion. Tr. at 3496:10-3498:6 (discussing Oklahoma 303(d) report); 5409:1-3 (Olsen); 8880:22-8888:12, 8892:16-8893:3 (Dr. Connolly discussing various phosphorous

sources); 10671:12-10676:14 (Sullivan); 6549:6-6556:22 (Engel); DJX640 at iv-xiv; DJX2238; DJX2733.

182. When phosphorous levels in surface waters are plotted by concentration and location, the data suggest a strong relationship between elevated levels and the IRW's numerous WWTPs. Tr. at 8924:13-8925:18, 8996:6-8999:16 (Connolly). The highest total phosphorous concentrations are most frequently found downstream from WWTPs, and levels decline moving downstream from those facilities. Tr. at 8927:18-8932:13 (Connolly); DJX6089. This relationship is even more pronounced for SRP; in fact, only a handful of elevated SRP measurements gathered by the State's experts are not downstream from one or more WWTPs. Tr. at 8932:14-8934:20 (Connolly); DJX6090. Defendants' expert Dr. John Connolly analyzed phosphorous concentrations moving down-gradient along the Illinois River and determined that SRP levels in the IRW are driven dominantly by WWTPs. Tr. at 8936:15-8955:2 (Connolly: "Based on the data that I have, [WWTPs] appear[] to be the dominant impact."); DJX6091; DJX6093; DJX6095. The Court finds that the evidence of the dominant impact of WWTPs was credible.

183. This relationship is confirmed independently by an analysis of phosphorous concentrations at the Watts and Tahlequah gauging stations, which demonstrates that under base flow conditions phosphorous concentrations passing those stations correlate strongly with WWTP discharges upstream. *See* Tr. at 8958:19-8963:4 (Connolly); DJX6097. It is further confirmed by sampling conducted by the State concurrently upstream and downstream of several WWTPs. In each instance phosphorous concentrations upstream measured approximately 0.037 mg P/L or less, but concentrations downstream were much higher. *See* Tr. at 10669:2-10671:24 (Sullivan); DJX2240.

184. The parties do not dispute that a majority of total phosphorous that reaches Lake Tenkiller is delivered during high flow or runoff conditions when the volume and velocity of water in the system increases following storm events. Dr. Connolly estimated that counting all flow conditions, 75 to 80 percent of total phosphorous moving into Lake Tenkiller is delivered during higher flow conditions. Tr. at 8906:25-8908:3. The parties do not dispute that non-point source phosphorous contributes to loading during higher flow conditions. Base flow conditions, on the other hand, are dominated by readily bioavailable SRP from WWTPs. Tr. at 8894:16-8901:374; 8902:5-8904:8; 8909:25-8917:22 (Connolly); DJX6088; DJX6099. During the algae growing season, IRW rivers and streams experience base flow conditions approximately 80 percent of the time. Tr. at 8963:5-8965:22 (Connolly). Thus, most nutrients that support algae growth come from point sources.

185. Particulate or organic phosphorous from non-point sources can convert to SRP and support algal growth, but such conversion processes take time. Tr. at 8986:18-8987:15 (Connolly). This delay is significant given the geography of the IRW. The Illinois River flows swiftly as it moves from Arkansas into Oklahoma. Tr. at 8965:23-8969:4; 8984:3-8986:17 (Connolly); DJX6100. This moves much of the particulate phosphorous associated with non-point sources through the river system before it can support algal growth. *Id.*; *see also* Tr. at 1640:13-1642:18 (Fisher: “fine-grain muds that are generated within the Illinois River Watershed are carried to Lake Tenkiller and sedimented into the lake onto the lake bottom.”).

186. Non-point source phosphorous also has minimal impact on Lake Tenkiller. The State’s lake expert, Dr. Wells, presented imaging showing the entry of colder and faster-moving river water into the lake. The river water plunges to the bottom where it follows the thalweg (the pre-impoundment river channel). Tr. at 6715:25-6716:15 (Wells); Tr. at 8988:25-8989:6

(Connolly). This plunge carries with it particulate phosphorous and algae, which are then sequestered on the bottom of the lake. Tr. 8989:7-8990:6 (Connolly). This phosphorous has only minimal opportunity to reenter the water column and reach the upper level of the lake during the algae-growing season. Tr. at 8990:7-8996:5 (Connolly).

187. Based on these mechanics and fate and transport processes, the weight of evidence suggests that point sources continuously discharging SRP directly into IRW rivers and streams during all flow conditions are the dominant source of bioavailable SRP stimulating algae growth in downgradient rivers, streams, and Lake Tenkiller. *See* Tr. at 8924:13-8925:18; 8996:6-8999:16 (Connolly).

188. Oklahoma's Scenic Rivers criterion of .037 mg/L total phosphorus applies only to certain designated waterways in the IRW, all of which are located downstream from one or more WWTPs. Tr. at 10676:15-10678:10 (Sullivan). WWTPs discharge approximately 37,000 kg of total phosphorous into IRW waters annually. *See* Tr. at 8926:2-8927:2 (Connolly). The State did not controvert the evidence that SRP discharges from WWTPs are sufficient to account for all of the algae downstream from those facilities. *See* Tr. at 9116:9-13 (Connolly). Dr. Connolly thus testified that removing poultry litter from the IRW "would not have a significant impact on the water quality in the lake or in the Illinois River." *See* Tr. at 9000:25-9001:10 (Connolly). No evidence in the record contradicts this finding.

189. In addition to WWTPs, phosphorous data in the IRW suggest that urban development generally is another substantial contributor to nutrient loading in the Illinois River system. Tr. at 10686:24-10688:11; 10692:10-10698:19 (Sullivan); DJX2244; DJX2245. The State's river expert, Dr. Jan Stevenson, concurred that urban land use causes large increases in phosphorous levels in IRW waters. Tr. at 7252:2-9 ("I believe the effect is large.").

190. Urban runoff is a well-recognized source of contaminants including phosphorous. Tr. at 8886:1-11 (Connolly). EPA assesses the impacts of urban runoff through the National Urban Runoff Program. Tr. at 8886:1-11 (Connolly); *see also* 5467:23-5468:1 (Olsen).

191. Urban development impacts water quality in a variety of ways. Urbanization contributes an initial “pulse” of contaminants to surface waters. Tr. at 8884:17-25 (Connolly). Urban development reduces forested lands, which are substantial conservators of phosphorous in the soil and a natural bulwark against erosion. Tr. at 8882:12-24 (Connolly).

192. Once developed, urban areas are a steady source of contaminants, including phosphorous, to surface waters. The replacement of pastureland and forests with roads, buildings, parking lots, and other impervious surfaces replaces the filtering effect of soils with an efficient system of drains and storm sewers that divert urban storm water to surface streams and rivers. Tr. at 8884:17-8885:25 (Connolly); 10677:22-10681:5 (Sullivan). Land use within urban areas, such as construction, use of water-soluble fertilizers, human activities, and household pets, all combine to impact water quality. Tr. at 10688:12-10692:9 (Sullivan).

193. The IRW has been among the fastest growing regions in the United States over the past 20 years. *See supra* ¶ 25. Development patterns in the IRW exacerbate these impacts as urban areas are located upstream in its headwaters, meaning that urban runoff can impact a much broader portion of the watershed. *See* Tr. at 8886:12-25 (Connolly); 10663:25-10665:17 (Sullivan); DJX2238.

194. Although the impacts of waste water discharge and urbanization on IRW waters are substantial and uncontroverted, they do not account for all phosphorous concentrations in all IRW rivers and streams. *See* Tr. at 10698:20-23 (Sullivan). On cross-examination Dr. Connolly agreed that WWTPs are not the only source of SRP in the IRW, but explained that on account of

the mechanics of the IRW, SRP from nonpoint sources will have minimal impact on water quality. Tr. at 9128:3-17, 9130:7-9131:7. In its rebuttal case, the State challenged Dr. Connolly's opinion that WWTPs are the dominant source of SRP by pointing to levels of SRP measured in small tributaries not downstream from point sources. *See* Tr. 11369:23-11371:1 (Engel). This, the State argued, demonstrates that poultry litter application is a source of SRP. *See* Tr. at 11374:14-11375:15; 11379:14-11381:10 (Engel). The evidence, however, does not support this contention.

195. The State conducted a study of SRP concentrations in a subset of subwatersheds across the IRW that are not impacted by point sources but contain varying concentrations of poultry operations. First, the State conducted no site specific investigation to assess the actual source of this SRP. But second, and more importantly, as the State's expert Dr. Bernard Engel acknowledged, the State recorded average SRP levels of 0.027 mg/L in these subwatersheds under baseflow conditions. This contrasted dramatically with the SRP levels the State recorded in small tributaries impacted by point sources, which measured from 1.251 mg/L to 1.866 mg/L SRP under base flow conditions. Tr. at 9069:11-9071:25 (Connolly); 11494:8-11499:20 (Engel); 11519:2-11521:18 (Connolly). The State suggested that given the vast number of small tributaries in the IRW, they could dominate the system. Tr. at 11500:10-11501:6. In response to the Court's questioning, however, Dr. Connolly explained that if the state sampled a representative set of small watersheds to generated the 0.027 mg/L SRP average, then no matter how many small tributaries are combined, the concentration will remain 0.027 mg/L. Tr. 11520:24-11521:8. The State's evidence shows that waters from subwatersheds without WWTP impacts actually dilute much higher SRP concentrations coming from watershed areas impacted by urban influences and waste water effluent. Thus, the State's rebuttal evidence supported the

Defendants' theory: that WWTPs are the dominant source of bioavailable SRP in the IRW. The Court found Dr. Connolly's testimony to be reasoned and credible.

196. The record is otherwise inconclusive as to the origins or causes of phosphorus levels (including SRP) in IRW surface waters. On the record evidence before the Court, differences in the location, timing, and manner of contributions from various potential non-point sources of phosphorous preclude any attempt to attribute those phosphorus concentrations to poultry litter.

197. One such non-point source of phosphorous is the IRW's substantial cattle industry. Tr. at 8887:21-8892:15 (Connolly); 10713:21-10726:14 (Sullivan); DJX2250. Defendants estimate the IRW cattle population at approximately 200,000 head; State witnesses put the number at nearly 300,000 head. Tr. at 9835:19-23 (Clay); 2437:9-15 (Fisher).

198. Cattle impact water quality in a number of ways including: by depositing manure directly into or next to rivers and streams; by removing stream bank vegetation in areas where they loaf thereby increasing the potential for erosion; by compacting soils reducing the possibility of infiltration; and by channelization. Tr. at 2443:20-2444:9 (Fisher); 10719:11-10726:14 (Sullivan). The State of Oklahoma has specifically warned "farmers and ranchers that cattle and cattle mineral feeders and the removal of foliage in riparian areas and erosion can cause nutrient pollution in surface waters." Tr. at 5524:7-18 (Olsen).

199. Cattle in the IRW generate annually hundreds of thousands of dry tons of manure, which contain more phosphorous than all the poultry litter available for land application in the IRW. *See* Tr. at 9841:1-12, 9847:2-7, 9848:21-9849:6, 9851:22-9854:5 (Clay). The handful of cattle runoff samples gathered by the State measured extremely high levels of phosphorous. *See* Tr. at 2676:16-2677:17 (Fisher); 5515:4-5516:2 (Olsen); Ok. Ex. 6923-STOK0055246 (lab result

showing cattle runoff samples with phosphorous concentration six to seven times greater than a concurrently tested sample from the Springdale WWTP).

200. In addition to cattle, numerous other types of livestock and wildlife contribute phosphorus into streams or onto the landscape in the IRW. These animals produce 950 tons per year of phosphorus. Tr. at 9850:10-9851:18 (Clay).

201. The State also introduced evidence of extensive human recreation in the IRW, which can also degrade water quality. *See supra* ¶28. The State has not quantified the impact of these activities on water quality.

202. The IRW also has a substantial human population that uses septic systems rather than municipal waste water treatment facilities. Approximately 73,000 people in the IRW use septic systems. Tr. at 10709:1-10710:24 (Sullivan). These systems are designed to dissipate residential waste below ground and therefore have the potential to impact both groundwater and surface waters. Tr. at 1402:15-1404:1 (Phillips); 6533:2-5 (Engel); 10711:7-10712:19 (Sullivan); DJX640. The State has previously estimated that a substantial number of septic systems in the IRW do not meet State requirements. Tr. at 1402:15-1404:1 (Phillips); DJX640 at viii. In fact, the State's experts admitted a statistically significant correlation between septic systems and phosphorous concentrations in streams. Tr. at 10713:2-20 (Sullivan).

203. On cross-examination, the State questioned Dr. Sullivan regarding his review of alternative potential sources of phosphorous to IRW waters, specifically as to their magnitude. Tr. at 10906:12-10907:20, 10908:11-20 (Sullivan). The State's point was that some of these alternate sources such as septic systems and sewage bypasses are quite small when assessed at the watershed-wide scale. But this does not contradict Dr. Sullivan's point that such sources can nevertheless have significant localized influences, potentially explaining some of the impacts the

State documented but did not investigate. Tr. at 10953:14-10954:2 (Sullivan). The Court finds Dr. Sullivan's testimony on this point to have been reasonable and credible.

204. In addition to anthropogenic sources, IRW soils naturally contain a substantial amount of phosphorous, which Dr. Engel estimated at 6.3 million tons of phosphorous. The amount of phosphorous that the State estimates is added to IRW soils from poultry litter applications each year constitutes only 0.07 percent of that amount. Tr. at 6366:22-6367:18 (Engel); 10297:8-10298:13 (Bierman).

205. Phosphorous sequestered in IRW soils can be moved to rivers and streams through both naturally-occurring and human-induced erosion. Tr. at 10699:1-10700:2 (Sullivan). Flowing rivers naturally result in streambank erosion. Streambanks in the IRW contain nutrients including phosphorous. Tr. at 1527:12-14 (Phillips); Tr. at 10701:17-20 (Sullivan). As the State has conceded, stream bank erosion is a major problem in the IRW, exacerbated by deforestation and urbanization, such that phosphorous-bearing soils eroded into IRW waters are part of the "nutrient problem." Tr. at 1409:3-19; 1411:4-1412:7 (Phillips). Defendants' expert Wayne Grip demonstrated significant movement in the location of river channels in the IRW over the past 30 years resulting in substantial amounts of erosion. Tr. at 10080:9-17. Mr. Grip estimated that 15.5 million cubic yards of streambank soils have eroded into the main channel of the IRW. *See* Tr. at 10059:16-10060:21 (Grip); 10701:17-10705:03 (Sullivan); DJX633-0031, -055, -072, -075, -089, & -105.

206. Erosion also results from and is accelerated by human activities such as construction, farming, and road-building, which disturb soils and increase opportunity for erosion. Tr. at 1409:2-19; 1411:11-412:7 (Phillips). Dirt roads, in particular, are a substantial

source of phosphorous. Tr. at 10706:13-10707:14 (Sullivan). The IRW contains an extensive network of unimproved roads. Tr. at 10707:15-10708:16 (Sullivan).

207. Erosion negatively impacts water quality by introducing nutrients into the water column, and also by increasing siltation and turbidity which can in turn injure fish and benthic populations. *See* Tr. at 10705:4-10706:12 (Sullivan).

208. Whether any particular source may impact water quality is controlled not only by the magnitude of the source, but also by its proximity to and potential to reach surface waters. Different substances have different opportunities to enter flow paths and different propensities to move to flowing waters. Tr. at 10738:4-10739:2 (Sullivan). Phosphorous movement depends on the availability of transport pathways such as overland flow. Tr. at 10739:3-20 (Sullivan). Phosphorous transport is most likely from “critical source areas,” which combine a ready transport mechanism with elevated phosphorous levels. Tr. at 10740:1-21 (Sullivan).

209. The terms “runoff” and “overland flow” have distinct hydrological meaning. “Overland flow” refers to water running over the surface of the land; “runoff,” on the other hand, refers to water moving to streams during storm events regardless of the pathway. Tr. at 10741:20-10743:16 (Sullivan). Overland flow requires rainfall sufficiently heavy to overwhelm the soil’s infiltration capacity (saturation excess flow) or sufficiently sustained to saturate the ground (Hortonian flow). Tr. at 8921:3-12 (Connolly); 10721:11-10723:11 (Sullivan). The potential for overland flow increases in “hydrologically active” areas such as riparian zones where a shallower water table and converging flows reduce the capacity for infiltration and filtering. Tr. at 10722:22-10723:6 (Sullivan). Even when phosphorous is moved overland it does not necessarily reach surface waters but may be deposited, filtered, or taken up by vegetation. Tr. at 8857:20-8859:2 (Connolly); 10743:23-10745:7 (Sullivan).

210. The potential for phosphorous to move off any particular location is a function of factors such as “soil characteristics, the infiltration rate, the distribution of sediment sizes, soil texture, and the steepness of the slope” as well as its hydrology. Tr. at 10739:3-20 (Sullivan); 6328:4-6329:7 (Engel).

211. On cross-examination, the State questioned Dr. Sullivan’s testimony regarding the potential for runoff from agricultural fields and locations where cattle graze to reach the IRW river and stream network. Dr. Sullivan agreed that overland flow can occur. Tr. at 10866:2-5 (Sullivan). But this acknowledgement does not contradict Dr. Sullivan’s testimony that such transfer does not *necessarily* occur, and that the State’s sampling program failed to demonstrate that it does occur. Tr. at 10743:23-10745:7 (Sullivan). As Dr. Sullivan noted, while many studies have asserted that this occurs, no study presented by the State has scientifically documented that process. Tr. at 10885:7-10886:3 (Sullivan). The Court finds Dr. Sullivan’s explanation of hydrologically active areas to be credible and compelling.

212. Of all the potential sources of phosphorous in the IRW, only poultry litter is regulated with specific consideration of these factors. *See supra* ¶¶ 39-125. In Oklahoma, other sources of phosphorous are not similarly regulated. Urban stormwater, for example, can contribute phosphorous directly to surface waters, reducing the impact of the overland fate and transport processes that constrain the movement of phosphorous from land applied poultry litter. Other potential sources including septic systems and erosion similarly can exert a direct influence on surface and groundwaters.

213. Sources that exist in or immediately adjacent to rivers and streams increase the potential for those sources to negatively impact water quality, as these areas are among the most hydrologically active. *See* Tr. at 10722:22-10723:6 (Sullivan). Poultry litter may not be applied

in these areas. *See supra* ¶ 49. Cattle in many IRW pastures, on the other hand, have direct access to IRW rivers and streams as cattle ranchers are not required to fence their cattle away from streams. Tr. at 1422:4-12 (Phillips). Cattle loaf and defecate in and around the water, spending many hours daily in riparian areas. *See* Tr. at 9860:11-9862:23 (Clay); DJX632-0055; DJX633-0051, -055. Beef cattle defecate up to 12 times a day, depositing up to five pounds of manure each time. Tr. at 9862:5-7 (Clay). Cattle ranchers in the IRW commonly provide cattle with mineral licks, which contain phosphorus and other nutrients and are often placed near water. Tr. at 508:19-509:19 (Tolbert); 2284:9-21 (Fisher); 5524:10-18 (Olsen); 4505:19-4507:15 (Reed); 6358:21-6359:6 (Engel). Cattle also contribute to erosion in riparian areas by compacting the soil, while also removing vegetation. Tr. at 508:19-509:19 (Tolbert); 5524:10-18 (Olsen); 9862:24-9863:3 (Clay). Cattle behavior thus impacts water quality in a variety of ways. Tr. 9865:5-9873:14 (Clay); DJX631-0013, -0014; DJX632-0047, 0055; DJX633-045, -051, -055. The State has recognized and expressed concern over the cattle impact on water quality. Tr. at 508:9-23 (Tolbert); 1421:22-1422:3 (Phillips); 5524:7-18 (Olsen); DJX640.

214. Further evidence indicates that the State is well aware of the impact cattle grazing is having on the water quality in the IRW. In 2005, Shanon Phillips of the Oklahoma Conservation Commission noted that the once high quality waters of the Cedar Hollow branch in the IRW became degraded with elevated nutrient concentrations and dramatic increases in periphyton growth in the late 1980s or early 1990s after lands in the subwatershed were leased for cattle grazing. DJX5666.

215. Non-point source phosphorous impacts, particularly in small streams, are inherently localized events. Tr. at 10587:7-15 (Sullivan). Assessing such impacts requires a measure of site-specific evaluation. Tr. at 10681:13-21 (Sullivan). The State presented no

evidence such as bracketed sampling or dye tracing to associate any elevated phosphorous reading or water quality measurement with poultry litter generally or any Defendant specifically.

216. Given the abundance of potential sources of phosphorous, the differences in the manner, quantities, and locations in which they are deposited, and the many fate and transport processes that govern whether they reach and impact water quality, the record is not sufficient to make any finding as to the relative contributions of any particular non-point source in the IRW. In particular, there is insufficient evidence for this Court to hold that there is a significant probability that phosphorous associated with any individual Defendant caused injury to any waters used for recreation or drinking water in the Oklahoma portion of the IRW.

F. The State's "Lines of Evidence"

217. The State offers a superficially attractive syllogism: a substantial volume of poultry litter is applied annually to pastures uniformly throughout the IRW; poultry litter contains a significant amount of phosphorous; when it rains, some portion of that phosphorous is carried off of those pastures and finds its way to the river and stream network; and elevated phosphorous levels are found throughout the IRW; therefore, there is a significant probability that phosphorous from poultry litter injures water quality in the IRW.

218. However, an analysis of causation at this level of abstraction ignores the Tenth Circuit's instruction to assess application practices, fate and transport characteristics, and alternate sources. *Tyson Foods*, 565 F.3d at 778. Proof of causation requires a more detailed and rigorous level of proof. The State has not presented the Court with traditional fate and transport field work supported and reliable analysis. Instead, the State relied on alternative "lines of evidence" offered by various experts. The Court addresses these below.

219. Dr. Bert Fisher offered a "ratio analysis," comparing the ratios of copper, zinc, arsenic, and phosphorous in samples gathered throughout the IRW. Based upon this analysis, he

contended that the relationships between the ratios of these components demonstrated that phosphorous found in IRW sediments must have come from poultry litter. Dr. Fisher's analysis was not a traditional fate-and-transport analysis, Tr. at 1648:5-8; 2090:17-19 (the Court), and was shown to suffer from a number of fatal flaws.

220. Dr. Fisher's ratios analysis is novel and unprecedented in the scientific literature. *See* Tr. at 2235:4-15; 2238:20-2239:2. Copper, zinc, phosphorous and arsenic occur in nature regardless of the presence of poultry litter, and have various different sources. *See* Tr. at 2261:9-22; 2263:6-12 (Fisher); 9008:13-9009:21.

221. Dr. Fisher's analysis assumes implicitly that phosphorous, zinc, copper, and arsenic share common fate and transport characteristics; otherwise, finding them together in the environment would say nothing as to source. Yet, Dr. Fisher himself admitted that this assumption is not well founded. *See* Tr. at 1995:24-1996:2, 2330:24-2331:15 (Fisher); 9002:2-9003:12 (Connolly). Copper, zinc, arsenic, and phosphorous exhibit different mobility, sorption, and bonding characteristics. *See* Tr. at 9003:15-9008:17 (Connolly). The State's own data confirms that the ratios of these constituents are quite different in poultry litter and litter-amended soil than they are in the surface waters and sediments of the IRW. *See* Tr. at 9010:25-9021:2 (Connolly); DJX6096; DJX6105; DJX6107. Separately, Defendants' expert Steve Larson credibly explained how Dr. Fisher's ratios analysis is undermined by the difference in fate and transport of these substances in groundwater. Tr. at 9734:4-21 (Larson). The Court concludes that Dr. Fisher's "ratio analysis" does not support the State's claims of causation.

222. Dr. Fisher also presented a regression analysis of various types of samples selected to represent groundwater. Based on this regression, Dr. Fisher concluded that groundwater in the IRW is impacted by phosphorous from poultry litter. However, Dr. Fisher's

correlation was achieved only by regressing together different types of samples such as springs, geoprobe samples, and wells that bear no obvious relation to one another. Taken individually, these sets of samples show no correlation to the State's edge-of-field data. Tr. at 2423:2-5; 2423:9-2426:22 (Fisher).

223. Defendants' hydrogeology expert, Steve Larson, plotted Dr. Fisher's spring, well, and geoprobe samples separately in order to evaluate whether the ratios of the concentrations of Dr. Fisher's tracer chemicals showed any correlation between the State's groundwater samples and the edge of field data when evaluated separately. Mr. Larson's data plots and analysis clearly demonstrated that when viewed separately, the State's samples of springs, wells and geoprobes do not demonstrate any statistically significant relationship to the State's edge of field samples, effectively undermining Dr. Fisher's opinions that concentrations of phosphorus, copper, zinc and arsenic demonstrate groundwater impact from litter use. Tr. at 9697:15-9710:23, 9714:7-9716:18, 9719:8-9724:19 (Larson); DJX1624; DJX1625; DJX1626; DJX1627; DJX1628; DJX1629.

224. Dr. Fisher also presented a core-dating analysis from which he opined that phosphorous concentration in Lake Tenkiller sediments have increased over time in concert with rising poultry production levels in the IRW. Dr. Fisher reached this conclusion only by combining data from different core samples taken in different parts of the lake. When each core is analyzed independently, the data show that phosphorous concentrations in the lake have been relatively constant over time, and have even declined in recent years. *See* Tr. at 2672:15-2674:7 (Fisher); 9081:10-9082:10 (Connolly). In fact, phosphorous concentrations in Lake Tenkiller sediments correlate not to rising poultry production but instead to varied concentrations of iron and aluminum in the sediments, with which phosphorous has a propensity to bond. *See* Tr. at

9082:11-9091:21; DJX6074; DJX6075. Increasing land application of poultry litter would not explain the concentrations of iron and aluminum compounds found in Lake Tenkiller sediments. *See* Tr. at 9091:22-9095:1; DJX6075.

225. Finally, the Court finds Dr. Fisher's testimony, taken as a whole, not to be credible. Dr. Fisher is a professional witness who volunteered his time to assist the State's private counsel to develop this lawsuit as a business venture. Tr. at 2195:9-15, 2209:16-25, 2213:21-2214:6, 2215:4-10 (Fisher). On the witness stand Dr. Fisher was evasive, and he was called upon to testify to numerous areas outside his formal training as a geologist. Dr. Fisher also made a number of errors that required extensive revisions in his analysis, yet he consistently reached the same conclusions. *See* Tr. at 2341:25-2342:10, 2352:4-11, 2370:6-2384:23, 2387:5-2388:13, 2388:20-2394:5 (Fisher). In short, Dr. Fisher often appeared more as an advocate than a helpful, impartial scientific expert.

226. Apart from his fingerprinting analysis, which was excluded on *Daubert* grounds, *supra* ¶ 178, Dr. Roger Olsen purported to have undertaken a "gradient analysis," following concentrations of various constituents of poultry litter from poultry litter-amended fields to Lake Tenkiller. Specifically, Dr. Olsen testified that he observed *decreasing* concentrations of phosphorus as he moved down-gradient. This, he testified, confirmed his opinion that poultry litter is the dominant source of phosphorous throughout IRW rivers and streams.

227. This testimony was not persuasive for several reasons. First, Dr. Olsen did not conduct a true gradient analysis following concentrations along an identified gradient as did Dr. Connolly. Tr. at 8947:7-8948:5 (Connolly). Instead, Dr. Olsen combined data for numerous different small tributaries, rivers, and streams across the watershed and across time, aggregating

data that bore little or no physical relationship to one another. Tr. at 9030:16-9031:6, 9032:9-24 (Connolly); 5445:20-5447:25 (Olsen).

228. With regard specifically to phosphorous, Dr. Olsen generated a “decreasing” concentration gradient in his aggregate dataset only by including in his analysis two small tributaries that contain point sources. *See* Tr. at 5545:21-5547:12 (Olsen). As noted, *supra* ¶¶ 194-195, the impact of WWTPs on small tributaries is much greater than the impact of non-point sources. When those WWTP-impacted tributaries are removed from Dr. Olsen’s analysis, the data in fact show increasing concentrations moving from non-point source-impacted streams to larger rivers. *See* Tr. at 5550:7-5553:22 (Olsen); 9070:3-9071:25 (Connolly). This contradicts Dr. Olsen’s contention that phosphorous concentrations decrease moving downhill away from litter application sites, and to attribute phosphorous concentrations downstream to the small tributaries on this basis would be inconsistent with known fate and transport principles.

229. Many of the State’s analyses rely on a collection of “edge-of-field” samples gathered under Dr. Fisher’s and Dr. Olsen’s direction. *See, e.g.*, Tr. at 2256:4-20 (Fisher: “So the runoff path is the primary pathway.”); 10750:7-20 (Sullivan). These samples were intended to reflect the extent to which phosphorous runs off of poultry litter-amended fields. *See* Tr. at 2073:15-21; 2257:21-2258:18 (Fisher); 5487:19-23 (Olsen). The evidence demonstrates, however, that these samples are not representative of edge of field runoff attributable to poultry litter. The State made no effort to investigate land use history at these locations. Tr. at 2280:6-14, 2280:25-2281:5 (Fisher). The State failed to demonstrate that it collected edge of field samples for litter amended fields associated with each Defendant. The samples were not generally gathered from water flowing across or off the surface of fields, but instead principally were gathered from stagnant water sitting in muddy puddles and ditches alongside dirt roads on

the edges of fields. *See* Tr. at 2281:22-2282:7, 2306:3-18, 2317:17-2318:2 (Fisher); 5488:18-22, 5490:12-17 (Olsen).²⁴ As Dr. Fisher and Dr. Olsen admitted, and as the record shows, these samples were impacted by sources other than poultry litter runoff including cattle manure, soils, cars, and roads. Tr. at 2273:12-2274:13, 2297:23-2298:15, 2316:17-2317:4, 2546:23-2599:8 (Fisher); 5491:14-5492:2; 5493:3-10; 5495:17-5496:2; 5498:15-22 (Olsen). These samples were typically gathered hours after rain events, and the State's sampling teams did nothing to document the extent to which the water in question could have reached or did reach any stream, lake or river in the Oklahoma portion of the IRW used for recreation or drinking water. *See* Tr. at 2554:13-21 (Fisher); 5490:18-5491:4 (Olsen). These samples were therefore not representative or reliable measures of runoff attributable to poultry litter. *See* Tr. at 10751:1-10753:5 (Sullivan).

230. The State's computer modeling expert, Dr. Bernard Engel, offered several analyses to buttress the State's causation claims.

231. First, Dr. Engel testified that approximately five percent of phosphorous contained in poultry litter will runoff during rain events. Dr. Engel based this figure on scientific

²⁴ The record contains photographs of a number of sampling sites, SOK6923-STOK0047626 (EOF007); SOK6923-STOK0037740 (EOF Spread 10); SOK6923-STOK0039141 (EOF Spread021); SOK6923-STOK0039185 (EOF Sampling Location); SOK6923-STOK0039179 (EOF Sampling Location); DJX118-STOK0047565 (EOF003); DJX118-STOK0047589 (EOF009); DJX118-STOK0040320 (EOF013); DJX118-STOK0047586 (EOF09); DJX118-STOK0047587 (EOF09); DJX118-STOK0038342 (EOF Runoff); DJX118-STOK0040328 (EOF16); DJX118-STOK0040330 (EOF17); DJX118-STOK0040332 (EOF18); DJX118-STOK0040334 (EOF19); DJX118-STOK0040342 (EOF21); DJX118-STOK0040344 (EOF22); DJX118-STOK0040346 (EOF23); DJX118-STOK0040348 (EOF24); DJX118-STOK00350 (EOF25); DJX118-STOK0040360 (EOF 27); DJX118-STOK0040370 (EOF28); DJX118-STOK0040374 (EOF30); DJX118-STOK0039143 (EOF SPREAD 23); DJX118-STOK0039020 (EOF SPREAD 30); DJX118-STOK0039084 (EOF SPREAD 30). *But see* DJX118-STOK0053936 (cattle pasture runoff sample taken at EOF CP-1A).

studies conducted by researchers *inter alia* at the University of Arkansas and Oklahoma State University. Tr. at 5708:22-5711:23. This, the State argues, proves that a substantial amount of phosphorous necessarily runs off from litter-amended fields and reaches waters in the Oklahoma portion of the IRW used for recreation or drinking water.

232. Dr. Engel's foundation cannot bear the weight the State places on it. The studies themselves make clear that their runoff measurements were obtained under artificial and unrealistic conditions. *See* Tr. at 6333:8-6339:20 (Engel). While these studies attempted to quantify runoff from test plots, the State seeks to extrapolate these results to represent runoff *that actually reaches a stream in the IRW*. This is not a credible proposition. These studies typically involve unrealistic amounts of poultry litter being doused with torrential levels of artificial rain. Indeed, the scientists whose testimony was presented at trial made clear the marginal applicability of this work. *See* Ct. Ex. 11 (Edwards Dep.), at 185:6-18, 185:23-24, 186:23-187:2, 187:12-16: (characterizing plot study conditions as "very extreme"); *id.* at 187:17-21, 187:23-25 (study not done with an eye toward anything that was going on in the IRW at all); Ct. Ex. 8 (Haggard Dep.), at 29:24-25, 30:1-18 (studies not meant to replicate real rainfall conditions; rainfall was simulated for convenience and speed. If they were replicating real rainfall, it would be a "worst case situation").

233. To couple with this "runoff coefficient," the State introduced a number of STP results contained in grower files maintained by ODAFF. Some of these STP tests indicated high STP levels on various grower fields and pastures. However, evidence of elevated STP levels in the IRW does not further the proof that phosphorous from poultry litter necessarily reached IRW waters. This is confirmed by the fact that even the scientists for the State agree that STP level alone is not a useful measure for managing poultry litter application. *See* Tr. at 6329:8-12

(Engel). Furthermore, the fact of an elevated STP reading does not prove that poultry litter was the cause. Tr. at 4091:17-4094:3 (B. Anderson); 5117:15-23 (Johnson). Nor did the State introduce any evidence that litter was applied to any such field after these measurements were taken. In fact the records indicate that farmers abide by their management plans and cease applications, as required by Oklahoma law, once STP levels exceed the applicable STP cutoff. *See supra* ¶¶ 66-75. Simply put, the existence of an elevated level of phosphorus in soils on a pasture does not prove that phosphorus from poultry litter has run off that pasture and injured some unidentified stream or river.

234. Next, Dr. Engel offered a “mass balance” analysis in which he summed the major contributors *and* removers of phosphorous from the IRW. Dr. Engel testified that approximately 76 percent of phosphorous entering the IRW each year arrives in poultry feed. Tr. at 6202:21-6203:8.

235. While a mass balance analysis is one tool that can be used in undertaking a causation analysis, its probative value is limited in this case. The mass balance study – standing alone – speaks only to the movement of phosphorous into and out of the *watershed*, not into the *waters* of the IRW. The fact that poultry operations import substantial amounts of phosphorous (in the form of feed) into the IRW does not in and of itself prove that any of that phosphorus *reaches* IRW waters and causes pollution. Tr. at 6351:4-8, 6363:15-6364:2 (Engel); 8841:20-8842:17 (Connolly); 10659:17-10662:2 (Sullivan). Dr. Engel disagreed with his assistant’s view that the mass balance study has nothing to do water quality or even with fate and transport of phosphorous. Tr. at 6347:21-6350:6 (Engel). The Court finds that the mass balance analysis does not support the State’s proof of causation because the mass balance analysis ignores the role of fate and transport.

236. Dr. Engel's mass balance analysis also advances the contention, repeated by a number of State witnesses, that cattle may be largely ignored as a source of phosphorous in the IRW because they are raised on forage grasses grown with poultry litter. Several state witnesses asserted that cattle therefore are simply "recycling" phosphorous that originated in poultry feed. Even if true as a factual matter, this contention is relevant only if one ignores the distinction between moving phosphorous into the watershed and moving phosphorous into the actual waters of the IRW.

237. As an initial matter, the record contains evidence of farmers using commercial fertilizers, as well as manures, to improve forage production. Tr. at 952:10-12 (Fite); 5791:7-18 (Engel). The record also demonstrates that cattle ranchers in the IRW commonly use commercial feed in the form of range cubes that contain phosphorus and that are made from materials imported into the IRW. Tr. at 668:7-12 (Fite); 4092:21-4094:3 (Anderson); 4490:4-11, 4504:18-4506:7 (Reed). The State presented no evidence as to how many cattle are or are not ranches on fields fertilized with poultry litter.

238. Second, forage grasses are always going to contain a certain amount of phosphorus per pound. As Dr. Johnson, the State's agronomist, explained, grasses can uptake phosphorous only up to their agronomic need. Tr. at 5001:2-15 (Johnson).

239. Third, the State's "recycling" argument ignores the essential role that cattle play as a transport mechanism. Cattle take up phosphorous from pastures where it may have little opportunity to impact water quality, convert it to more bioavailable forms, and can deposit it in or near IRW rivers and streams. Tr. at 2441:1-2444:9 (Fisher); 6540:22-6544:24 (Engel); 10727:16-10729:1 (Sullivan); *see also* Tr. 1401:1-24 (Phillips); DJX640 at vii ("cattle may act as a point source and deposit the nutrients directly into the stream").

240. The evidence shows that even were all litter removed from the IRW the remaining cattle eating forage grasses (regardless of whether or how those pastures are fertilized) will continue to impact the waters of the IRW. Tr. at 2445:9-2447:1 (Fisher).

241. Dr. Engel, along with the State's river limnologist, Dr. Jan Stevenson, both sponsored analyses purporting to correlate poultry house densities with phosphorous concentrations in a handful of IRW subwatersheds.

242. These analyses are insufficient to prove that poultry litter applications result in water quality injuries in the IRW. The correlations found were to the density of poultry houses, not to the pastureland where poultry litter is actually applied. Tr. at 5783:18-5784:1; 6384:18-6388:18 (Engel). There are many potential sources of phosphorus in rural areas where poultry houses are located besides poultry litter applications yet Dr. Engel and Dr. Stevenson did little to eliminate cross-correlations with other proximate sources of phosphorous. Tr. at 6377:11-6383:1 (Engel); 10753:6-10764:12 (Sullivan). Dr. Engel found a correlation between river phosphorous concentrations in streams in the 12 small subwatersheds studied and septic system densities in those areas. Tr. at 10713:2-20 (Sullivan); 5785:11-25 (Engel). Poultry house density also correlates to the volume of dirt roads and cattle. Tr. at 10753:6-10764:12 (Sullivan); DJX2257; DJX2258; DJX2259.

243. Dr. Stevenson's analysis was biased in part because it artificially increased the poultry house density in the study areas by employing up to 2-mile buffer zones around the subwatersheds to account for the possibility of poultry litter being imported into the subwatersheds. *See* Tr. at 10764:13-10767:13 (Sullivan). The analysis did not, however, account for poultry litter exported from of these sub-watersheds. The Court also views this analyses with skepticism because, in correlating poultry house density, the State counted as

many poultry houses in these 12 small subwatersheds as are estimated to be in the entire one million acre IRW. *See* 10766:15-10767:1 (Sullivan); *see also* Tr. at 7256:8-7257:2; 7302:6-7305:8 (Stevenson).

244. Finally, Dr. Engel's analysis proves little as it was conducted in the same small subwatersheds where Dr. Olsen claimed to see decreasing phosphorous levels. Thus, Dr. Engel found a correlation between poultry house density and relatively low levels of soluble reactive phosphorous. Tr. at 11374:14-11375:22 (Engel).

245. Dr. Engel also offered a computer model purporting to represent non-point source phosphorous runoff in the IRW. Dr. Engel employed a model entitled GLEAMS to calculate non-point source runoff, and then used an empirical "routing model" equation intended to relate point and non-point phosphorous loads to Lake Tenkiller. This model was the basis for various forecasts and hindcasts Dr. Engel offered to assess watershed conditions under various conditions. The Court finds Dr. Engel's modeling testimony to be unreliable. Tr. at 10313:5-10314:2 (Bierman).

246. First, the non-point source runoff model that Dr. Engel employed, GLEAMS, was developed for modeling at the field-scale, not at the watershed scale. Tr. at 6437:17-6443: 22; 6454:16-20 (Engel agreeing that "EPA fact sheet says that the GLEAMS model has low support for watershed modeling."). While more robust watershed models were available, Dr. Engel elected not to use one. Tr. at 6409:22-6410:10 (Engel). GLEAMS was also not designed for modeling urban areas. Tr. at 6453:25-6454:15 (Engel agreeing that EPA fact sheet indicates GLEAMS is not suited for urban land uses). Although Dr. Engel testified that GLEAMS can be modified to overcome these design limitations, there are a number of reasons to doubt the effectiveness or reliability of such a modification.

247. Dr. Engel's model misclassified a number of land uses, treating forests and highways as pastureland. *See* Tr. at 6492:25-6496:10 (Engel); 10287:2-10293:10 (Bierman); DJX2398; DJX2399; DJX2400. Dr. Engel's model also represented urban areas as alfalfa hay fields, and with hydrological code not appropriate for urban areas. *See* Tr. at 6505:21-6507:16; 11359:12-11360:1 (Engel); 10293:11-10295:23 (Bierman).

248. Dr. Engel agreed with the importance of modelers making realistic assumptions. Tr. at 6411:20-23; 6486:2-14 (Engel). Yet, Dr. Engel's model incorporated a number of assumptions that do not represent real-world processes. For example, GLEAMS assumes that all phosphorous on a field has an equal opportunity to run off regardless of its location or any site-specific considerations, an assumption that is inconsistent with fate and transport principles. Tr. at 6442:9-6443:17; 6461:23-6463:12 (Engel). It assumed, unrealistically, that all litter is applied in the IRW on a single day each year. Tr. at 6486:22-6487:11 (Engel). It assumed, incorrectly, that litter is applied to every part of every pasture in the IRW. Tr. at 6488:19-6490:7 (Engel). His model did not consider the statutory and regulatory restrictions on litter application set forth in site-specific nutrient management plans, and in fact assumes conduct in violation of those plans. Tr. at 6496:11-6503:12 (Engel). Finally, Dr. Engel "calibrated" his model by comparing his predicted runoff values, which represent runoff all across a million acre watershed, against observed flows into Lake Tenkiller—data sets that bear no relation to one another. Tr. at 10269:25-10271:20 (Bierman).

249. The unreliability of Dr. Engel's GLEAMS model was most clearly demonstrated by a programming error made by Dr. Engel's post-doctoral assistant. Tr. at 6414:5-16 (Engel). The GLEAMS model divides the IRW into its three major subwatersheds, the Illinois River, Barren Fork, and Caney Creek, and in turn divides these respectively into 21, 20, and 9

“hydrologic response units” (HRUs). Tr. 6398:16-6399:6 (Engel). HRUs are not necessarily contiguous land areas, but rather represent portions of each subwatershed having similar land use, land cover, and soil types, among other factors. Tr. at 6292:8-13 (Engel). The GLEAMS model then runs in series to calculate a runoff value for each HRU, which are then totaled within each subwatershed. Tr. at 6291:17-25 (Engel). Dr. Engel’s assistant first developed the code to execute this run for Caney Creek, which has only 9 HRUs. When he copied the code to the other subwatersheds, he failed to alter the code to reflect the larger numbers of HRUs. Tr. at 6292:14-6293:25 (Engel). Therefore, when the model was calibrated for Dr. Engel’s original report, it captured only the first 9 of the 21 and 20 HRUs in the Illinois River and Barren Fork respectively. In short, it omitted nearly half the watershed. Tr. at 6292:8-6294:4; 6413:25-6420:23 (Engel); 10265:10-13 (Bierman).

250. Despite omitting half the watershed, Dr. Engel’s model nevertheless generated results comparable to a full run and that correlated well to the “observed loads” measured by the USGS that Dr. Engel used to calibrate his model. Tr. at 6421:18-24; 6477:23-6479:20 (Engel). This was possible, Dr. Engel explained, because

during that calibration period, some of the parameters available to be modified to adjust the model were changed. In fact, the amount of phosphorus that was applied to these HRUs was the amount of phosphorus applied to the entire watershed.

And based on my knowledge of the model, experience with the model, and similar models, within the working ranges of nutrient applications onto the landscape that we’re working within here, that essentially doubling or greatly increasing the application rate provides results that are very similar to more area with the same application, but therefore, at a lower rate-per-unit area.

Tr. at 6635:2-24; *see also* Tr. at 6422:12-6423:3 (Engel). In short, Dr Engel’s model made up for the missing land area by randomly adjusting input parameters, including the amount of manure applied and phosphorous present the soil, and doubling the amount of manure applied to the remaining half. Tr. at 6428:24-6433:20: (Engel); 10265:14-10267:9 (Bierman). As Dr.

Engel acknowledged, this result would not obtain were this done in the real world. Tr. at 6422:2-15 (Engel). This convinces the Court that the Dr. Engel's application of the GLEAMS model in this case does not reliably represent real-world fate and transport processes in the IRW.

251. Even without these problems, Dr. Engel's GLEAMS model would be of only marginal utility because Dr. Engel was unable to offer any opinions related to the allocation of non-point source phosphorous between the myriad potential sources in the IRW. Tr. at 6316:20-6318:11; 6576:6-6578:9 (excluding allocation testimony for failure to comply with Rule 26 disclosure requirements). Moreover, Dr. Engel offered no causation opinion (whether based on his model or otherwise) specific to any individual Defendant.

252. The second half of Dr. Engel's model, his "routing model" employs an equation embedded in an Excel spreadsheet. That "routing equation" is $P\ Load = a + b(Q)(P) + c(Q^2)(P)$ where, a, b, and c are coefficients, Q represents USGS-observed flows, and P represents phosphorous accumulated in the river. To apply his equation in this case Dr. Engel first "calibrated" it to the IRW by calculating the values for a, b, and c that allowed the equation to calculate predicted phosphorous loads to Lake Tenkiller that best matched USGS observed loads. Tr. at 6246:22-6248:14. Once calibrated, Dr. Engel testified, the resulting equation represents phosphorous transport from edges of fields throughout the IRW to the gauging stations above Lake Tenkiller at the outlets of each of the Illinois River, Barren Fork, and Caney Creek and accurately relates GLEAMS' prediction of runoff loads to Lake Tenkiller. Tr. at 6249:25-6251:16.

253. As support for the accuracy and reliability of his model, Dr. Engel pointed to the statistical tests he performed to compare his predicted loads to his observed loads from the routing model. Tr. at 6248:15-6249:5 (Engel: "So R²'s and Nash-Sutcliffe coefficients were both

above the range of values that one would hope for calibration, and that was also true for the validation data sets.”);²⁵ 11416:25-11417:22 (Engel). The fact that the model could be calibrated and validated, he testified, demonstrates the validity of his GLEAMS runoff calculations, which are used as inputs into the routing model. Tr. at 6466:22-6467:7.

254. The Court concludes that Dr. Engel’s routing model, or equation, is flawed and unreliable for several reasons. First, Defendants’ modeling expert Dr. Victor Bierman demonstrated that by following Dr. Engel’s calibration process, the routing model can be made to correlate a wide range of inputs (including numbers that bear no relationship whatsoever to actual phosphorous loading) to Dr. Engel’s observed data. Tr. at 10250:18-10262:2; 10267:10-10269:16 (Bierman); DJX2414; DJX2416. In fact, Dr. Bierman was able to replace Dr. Engel’s modeled phosphorus runoff with the S&P 500 data for the relevant time period and correlate the data to the observed phosphorus loads with an equally high R-squared value. *Id.*

255. In rebuttal, Dr. Engel asserted that because Dr. Bierman’s tests had altered Dr. Engel’s coefficients a, b, and c, Dr. Bierman had improperly changed the model, rendering his tests invalid. This is not the case. Dr. Bierman followed the same process of calibration that Dr. Engel followed in adjusting the coefficients during the calibration process to find the best “fit” between the modeled phosphorus loading and the observed data to determine whether the two could be related. Tr. at 11428:20-11429:5; 11436:1-11440:23. Dr. Bierman’s analysis generated R-squared and Nash-Sutcliffe values as good as or better than Dr. Engel’s values. Tr. at 11441:2-11447:20 (Engel). Dr. Bierman’s analyses demonstrate convincingly that Dr. Engel’s

²⁵ R-squared values and Nash-Sutcliffe coefficients are statistical measures of correlation. In both cases, the higher the R-squared value or Nash-Sutcliffe coefficient, the greater the statistical correlation between two sets of data – e.g., the modeled outcomes and observed outcomes. Tr. at 6249:25-6251:1; 6476:20-24 (Engel).

ability to correlate his phosphorous inputs to observed loads to Lake Tenkiller does not confirm whether his GLEAMS calculations accurately represent non-point source runoff in the IRW.

256. Dr. Engel's routing model achieves this high degree of correlation between predicted and observed loads because both data sets incorporate USGS flow data. Both the predicted and "observed" loads are calculated by multiplying the coefficients and other variables by flow and then again by flow squared. As a matter of simple mathematics, the regression effectively regresses flow data upon itself, essentially ensuring a strong correlation. *See* Tr. at 10262:16-10264:2 (Bierman); 11458:8-20, 11461:24-11464:8 (Engel).

257. Because flow dominates both equations, the routing equation is indifferent to wide variations in phosphorous inputs or coefficient values. Dr. Engel proved this himself by running Dr. Bierman's made-up phosphorous loads through his own routing equation using his own coefficients, and nevertheless generating high R-squared values. *See* Tr. at 11448:8-11454:9 (Engel). This was further demonstrated during the cross examination of Dr. Engel when significant changes were made to the coefficients in the routing model, which was integrated into an Excel spreadsheet, yet the model produced little to no meaningful change in R-squared or Nash-Sutcliffe values. *See* Tr. at 11458:25-11461:23, 11465:17-11467:13 (Engel).

258. Finally, Dr. Engel's routing model does not represent the real world fate and transport processes that the Tenth Circuit has indicated are important in such a case. For example, it assumes that every molecule of phosphorous measured as running off a field necessarily reaches IRW streams and rivers and then necessarily reaches Lake Tenkiller, regardless of its source or where it enters the stream network. Tr. at 6459:6-22; 11409:1-8 (Engel). This assumption is not consistent with fate and transport processes in the real world where phosphorous can be taken up or sequestered in a variety of ways on land or in the water.

Tr. at 8857:20-8859:2 (Connolly); 10284:2-10285:22 (Bierman). Also, it compares runoff from across the watershed with measured loads to Lake Tenkiller, ignoring the processes that occur in between. Tr. at 10271:24-10273:6 (Bierman).

259. The routing model's inability to accurately represent real world processes was underscored by Defendants' demonstration that it will calculate negative phosphorous balances in the rivers and negative phosphorous flows to the lake. Tr. at 11471:22-11481:3. As Dr. Engel admits, such results are clearly impossible in the real world. Tr. at 11479:21-11480:4.

260. Because the routing model will in some instances calculate negative phosphorous balances in the rivers and negative phosphorous flows to the lake, Dr. Engel had to modify (*i.e.*, "patch") his equation to prevent phosphorous levels from "going negative." *See* Tr. at 11480:5-11. For two of his subwatersheds Dr. Engel did not use the equation set out *supra*, *see* ¶ 252, that was disclosed in his expert report and in his direct testimony to the Court. Tr. at 6238:10-6239:12. Instead, he used an altered version to instruct the model that in the event it calculated more phosphorous loading to the lake than was accumulated in the river, it should reset the P-to-Lake value to the available amount of phosphorous in the river. *See* Tr. at 11472:22-11477:4. Thus, Dr. Engel instructed his model to delete phosphorous that it otherwise had calculated for distribution to Lake Tenkiller.

261. Dr. Engel suggested on rebuttal that this "patch" fixed his model. *See* Tr. at 11479:21-11480:11. However, the patch operates only on days when the equation actually results in negative phosphorus loads. The Court finds that to the extent the routing model would calculate "negative" phosphorus loadings on certain days, it is impossible to conclude that any of the loadings from this routing model are realistic or representative of actual fate and transport

mechanisms. That Dr. Engel did not disclose this “patch” in his direct testimony reflects negatively on his candor and credibility on this issue.

262. On cross examination Dr. Bierman agreed that conceptually GLEAMS may be modified to represent phosphorus transport from urban lands. However, this does not overcome Dr. Bierman’s point that in attempting to do so Dr. Engel made assumptions and modifications, such as representing urban lands as alfalfa hay fields, that are unsupportable. Tr. at 10351:10-10354:10 (Bierman). The State also suggested that Dr. Bierman’s critique of Dr. Engel’s watershed modeling merited less weight as Dr. Bierman did not develop and run his own watershed or in-stream model. Tr. at 10358:2-12 (Bierman). But Defendants had no obligation to present their own watershed model, and Dr. Bierman’s critique of Dr. Engel’s application of the GLEAMS model and his routing model were well-placed and well taken. *See, e.g.*, Tr. at 10381:13-10382:15 (Bierman). Finally, the State focused heavily on the fact that in running his hypothetical scenarios through Dr. Engel’s routing equation, Dr. Bierman changed Dr. Engel’s coefficients. Tr. at 10363:2-10367:11; Tr. at 10372:8-10376:10 (Bierman). Dr. Bierman admitted as much, but explained that he was simply following Dr. Engel’s own calibration process during which the coefficients were not constrained to particular numerical values. Tr. at 10375:7- 10376:10; Tr. at 10377:18-10379:19 ((Bierman: responding to the Court’s inquiry). The Court found Dr Bierman’s testimony to be credible and persuasive.

263. Finally, the State’s efforts to prove causation included the admission into evidence of dozens of documents that address, in one form or another, whether poultry litter impacts water quality in the IRW. These documents include state and federal studies, watershed planning materials, and policy recommendations and reports. While a number of these publications assert that poultry litter is or may be a source of phosphorous in IRW waters and

may therefore be associated with water quality problems, almost all of them make this assertion without any reliable analytical support or analysis. *See, e.g.*, Tr. at 9177:11-9178:15; 9191:7-9192:5; 9441:13-9442:19 (Connolly); 10888:24-10892:6 (Sullivan).

264. Typical of one category of these documents are the reports of the Secretary of the Environment on the IRW. *See, e.g.*, Ok. Ex. 5662, Ok. Ex. 5663. These policy-oriented documents began asserting the significance of poultry litter to water quality at about the time that this lawsuit was first threatened. Another category of documents is represented by the OCC's basin management plan. DJX640. This document, authored by Shannon Phillips, attempts to compile other studies and analysis of IRW impacts to date. It may take a somewhat more scientific approach, but still relies to a large degree on multiple layers of hearsay and opinion. At bottom, none of these reports undertakes the sort of rigorous and analytical scientific inquiry the Tenth Circuit has indicated is necessary to assess causation in a case such as this. *See Tyson Foods*, 565 F.3d at 778.

265. At a minimum, the State has not identified any particular analyses contained within these reports that the State contends is a scientifically robust proof that poultry litter contributes phosphorous to waters in the Oklahoma portion of the IRW that are used for recreation or drinking water, which in turn causes water quality injury. While a number of these documents assert that this is the case, assertions and speculation do not constitute proof.²⁶ Tr. at

²⁶ The State, in particular, has placed into the record a substantial volume of articles, publications, and reports, the vast majority of which were never the subject of any witness testimony. While the Court has reviewed these materials, the law is clear that the onus lies with the party offering the proof, not with the Court, to elicit the relevant portions of the evidence. As the Tenth Circuit has noted, a “district court has discretion to go beyond the referenced portions of these materials, but is not required to do so. If the rule were otherwise, the workload of the district courts would be insurmountable.” *Mitchell v. City of Moore*, 218 F.3d 1190, 1199 (10th Cir. 2000) (quoting *Adler v. Wal-Mart Stores, Inc.*, 144 F.3d 664, 672 (10th Cir. 1998)). *See*

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10888:24-10892:6 (Sullivan). None is sufficient to answer the key questions before the Court—whether and to what extent runoff of phosphorus from litter-applied fields and pastures in the IRW is making its way to the waters in the Oklahoma portion of the IRW used for recreation or drinking water and causing injury.

G. Defendant-Specific Causation

266. As noted at the outset, the State bore the burden of demonstrating not just that phosphorous from land-applied poultry litter has reached and injured waters in the IRW used for recreation or drinking water but also that that phosphorus from poultry litter attributable to each individual Defendant did so.

267. The State, however, introduced hardly any Defendant-specific evidence. In fact, no expert for the State presented this Court with opinion testimony or scientific analysis purporting to demonstrate that phosphorus originating from any specific location land-applied with poultry litter has been transported by runoff or otherwise to waters used for recreation or drinking water in the Oklahoma portion of the IRW in quantities sufficient to cause harm. *See* Tr. at 6457:19-6458:1 (Engel: Not aware of any site-specific analysis by any State witness); 6503:13-21 (no site-specific analysis using modeling); 5448:1-11 (Olsen: no effort to track phosphorous from any particular site to Lake Tenkiller); 2534:4-16 (Fisher: did not identify any specific contaminated location).

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also SIL-FLO, Inc. v. SFHC, Inc., 917 F.2d 1507, 1513-14 (10th Cir. 1990) (a court need neither sift through the record to find support for an argument nor manufacture arguments for a party); *Boldridge v. Tyson Foods, Inc.*, 2007 WL 1299197, at *2 (D. Kan. May 2, 2007) (gathering authorities), *aff'd*, 280 F. App'x 723 (10th Cir. 2008). As the Seventh Circuit observed under analogous circumstances, “Judges are not like pigs, hunting for truffles buried in briefs.” *United States v. Dunkel*, 927 F.2d 955, 956 (7th Cir. 1991) (per curiam).

268. Similarly, the State failed to tie any specific causation analysis, specific instance of runoff, or specific injury to any individual Defendant. *See* Tr. at 6394:17-20, 6395:8-16 (Engel: could not link poultry house density analysis to specific Defendants); 7316:22-7317:5 (Stevenson: poultry house density analysis not Defendant-specific); 1136:2-6 (Phillips: not relating any instance of pollution to any Defendants in this case), 1143:18-22 (not relating any instance of excess nutrients to any Defendants in this case), 1392:11-22, 1392:23-1393:5 (cannot link instances of poultry litter applications to Growers contracting with Defendants); 3578:11-18 (Strong); 5122:14-24 (Johnson: soil data not correlated with any poultry grower); 2504:17-22, 2506:2-6 (Fisher: cannot allocate poultry litter production data to any Defendant).

H. Conclusions as to Causation

269. In light of the foregoing discussion the Court concludes that the State has failed to carry its burden to demonstrate that Defendants caused an injury for which the State may recover. The dominant form of phosphorous under most flow conditions is soluble reactive phosphorous from WWTPs. Tr. at 8936:15-8955:2 (Connolly). While phosphorous from other sources can and does enter the river, that occurs most often under runoff or high flow conditions, when river velocity and the form of phosphorous combine to minimize its impact on water quality. Tr. at 8894:16-8901:374; 8902:5-8904:8; 8906:25-8908:3, 8909:25-8917:22; 8963:5-8965:22 (Connolly). On cross-examination and in its rebuttal case, the State presented nothing to rebut Dr. Connolly's analysis on this point; in fact, the State's rebuttal case supported his analysis. *See supra* ¶¶ 194-195.

270. The State did present data from areas not downstream from waste water treatment facilities. *See* DJX6089 (plotting all total phosphorous data); DJX6090 (plotting all SRP data); DJX2244 (plotting total phosphorous geomean all flows); DJX2245 (plotting total phosphorous geomean base flows). However, the vast majority of these data are located in Arkansas, not

Oklahoma, and therefore do not represent injuries for which this Plaintiff may recover. *See* Response to Defendants' Motion for Partial Judgment as a Matter of Law Based on Standing, Dkt. No. 1111, at 2-3 (Mar. 30, 2007) (abandoning claims for injuries in Arkansas).

271. The record does contain data showing phosphorous concentrations in Oklahoma that are not downstream from one or more WWTPs. *See* DJX6089; DJX6090; DJX2244; DJX2245. The majority of these, however, fall near or below Oklahoma's Scenic River Standard (which will not even apply in these smaller waterways); only a handful demonstrate elevated phosphorous levels in the State of Oklahoma. *See id.* Despite this small number of samples, the State failed to perform any significant site-specific investigation in these small tributaries to confirm its allegation that these resulted from poultry farming. *Cf.* Tr. at 10953:14-10954:2 (Sullivan). In the final analysis, on this record it is impossible to assess whether such readings result from poultry litter application as opposed to from any number of other sources of phosphorous such as cattle watering, erosion, urban influences, human development, waterfowl, wildlife, or septic systems. This is particularly true given the fact that poultry litter is applied pursuant to state issued plans designed to minimize its impact, whereas other sources are not. *See supra* ¶¶ 39-125.

272. Moreover, to the extent that the State did introduce some evidence suggesting some contribution of phosphorous from poultry litter to IRW rivers and streams, the State failed to tie any particular degree of contribution to any particular Defendant. The State chose to sue multiple individual Defendants and accordingly bore the burden of proof as to each Defendant. That burden has not been met.

273. Accordingly, the Court concludes that the State failed to prove that the Defendants have caused or contributed to the harms which the State alleges in this case. This

conclusion is an adequate basis to grant judgment for Defendants on each remaining claim, independent of the Court's other findings and conclusions.

IV. AGENCY

274. The State has separately failed to carry its burden as to liability because the State has not shown that the Defendants are responsible for the injury-causing conduct that is the subject of the State's lawsuit.

275. In order to prevail on any of its claims, the State must show that Defendants are legally responsible for the poultry litter applications that form the basis for each Defendant's purported contribution to the alleged harm. Defendants cannot be held liable for the actions of third parties, and the Court cannot enjoin those who are not before the Court. *See* Fed. R. Civ. P. 65(d)(2) (an injunction may "bind[] only ... (A) the parties; (B) the parties' officers, agents, servants, employees, and attorneys; and (C) other persons who are in active concert or participation"); *Golden State Bottling Co. v. NLRB*, 414 U.S. 168, 179 (1973) (Rule 65 codifies the "common-law doctrine that a decree of injunction" applies only to parties and "those identified with them in interest, in privity with them") (internal quotations omitted); *Alemite Mfg. Corp. v. Staff*, 42 F.2d 832, 832 (2d Cir. 1930) ("[N]o court can make a decree which will bind any one but a party."); *see also Aerated Prods. Co. of Phila. v. Dep't of Health*, 159 F.2d 851, 854 (3d Cir. 1947).²⁷

²⁷ "Privity" in this context refers to an absent person who is "legally identified" with the party before the Court, not merely one in an contractual relationship with the party. *See Alemite*, 42 F.2d at 832-33; *see also Marshak v. Treadwell*, -- F.3d --, 2009 WL 1886133, at *5 (3d Cir. July 2, 2009).

276. The State's claims encompass poultry litter applications by three groups:

(1) Defendants themselves; (2) poultry Growers who contract with Defendants; and (3) ranchers, farmers, and others who buy, sell and use poultry litter in the IRW but who have no contractual or other relationship with the Defendants.

A. Applications of Poultry Litter by Some Defendants

277. The record includes some evidence that some Defendants have at some times owned or operated one or more poultry farms in the IRW. *See, e.g.*, Tr. at 3317:11-3318:8 (Keller); 3024:14-25 (M. Henderson); 4656:21-4657:10 (Maupin). However, the record is insufficient to demonstrate a causal link between poultry litter applications on any of these farms and any pollution in the waters of the State. The State did not attempt to trace any runoff from these farms to the waters in the Oklahoma portion of the IRW used for recreation or drinking water. Nor does the record show convincingly the amount of poultry litter (if any) that was applied at these farms in the years they were owned or run by one of the Defendants. Nor has the State demonstrated any specific violation of any Oklahoma or Arkansas law associated with the land application of poultry litter at any of these facilities. On the record, there is no basis to assess liability based on any such directly owned facility.

B. Applications of Poultry Litter by Poultry Growers Under Contract With Defendants

278. The State seeks to hold Defendants liable for the land application of poultry litter by contract Growers and by others to whom poultry litter is transferred by those contract Growers. The general common law rule in both Oklahoma and Arkansas is that a principal is not liable for the actions of an independent contractor. *See, e.g., Tankersley v. Webster*, 243 P. 745 (Okla. 1925); *Stoltze v. Arkansas Valley Elec. Coop Corp.*, 127 S.W.3d 466 (Ark. 2003).

279. However, the State invokes two exceptions to that general rule. First, the State contends that the poultry Growers who apply (and have applied) poultry litter in the IRW are not true independent contractors but are rather Defendants' agents/employees. Second, the State argues that pursuant to Restatement (Second) of Torts section 427B (1965), Defendants may be held accountable for poultry litter applied by Growers or others regardless of the nature of their relationships because the application of poultry litter is known to be likely to result in a nuisance. *See State's Trial Brief*, Dkt. No. 2627 at 19-21. The record before the Court supports neither exception.

280. The Oklahoma Supreme Court has established the following parameters for determining whether a person is an independent contractor or the principal's agent:

It is evident and we have so held that as a general rule the line of demarcation between an independent contractor and a servant is not clearly drawn, but the question of such relationship must be determined upon the facts peculiar to such case. The various elements to be considered are (a) the nature of the contract between the parties, whether written or oral; (b) the degree of control which, by the agreement, the employer may exercise on the details of the work or the independence enjoyed by the contractor or agent; (c) whether or not the one employed is engaged in a distinct occupation or business and whether he carries on such occupation or business for others; (d) the kind of occupation with reference to whether, in the locality, the work is usually done under the direction of the employer or by a specialist without supervision; (e) the skill required in the particular occupation; (f) whether the employer or the workman supplies the instrumentalities, tools and the place of work for the person doing the work; (g) the length of time for which the person is employed; (h) the method of payment, whether by the time or by the job; (i) whether or not the work is a part of the regular business of the employer; (j) whether or not the parties believe they are creating the relationship of master and servant; and (k) the right of either to terminate the relationship without liability.

Page v. Hardy, 334 P.2d 782, 784-85 (Okla. 1958); *see also Community for Creative Non-Violence v. Reid*, 490 U.S. 730, 751-52 (1989).

281. Among these various factors, the right to control the independent contractor's actions is of paramount importance. *See Lane-Hill v. Ruth*, 910 P.2d 360, 362 (Okla. Civ. Ct.

App. 1995) (“[The] right of control is the determinative factor as to whether the person causing the injury was the servant of the master or an independent contractor.”); *Dodd v. Rush*, 406 P.2d 261, 262 (Okla. 1965) (“The decisive test in determining whether one is an employee or an independent contractor is the right to control the physical details of the work.”); *Miller v. Steelman Constr. Co.*, 282 P.2d 740, 741 (Okla. 1955) (“An independent contractor is always subject to the direction of the principal as to result or progress of the work as distinguished from the method to be used in its performance.”); *see also Haworth v. Central Nat’l Bank of Okla. City*, 769 P.2d 740, 743 (Okla. 1989) (“An essential element of an agency relationship is that the principal have some degree of control over the conduct and activities of the agent.”); *Bank of Okla. N.A. v. Briscoe*, 911 P.2d 311, 317 (Okla. Civ. Ct. App 1996) (“Oklahoma’s law of agency holds that a principal-agent relationship is created from the parties’ agreement and/or conduct which shows that one is willing for the other to act for it, subject to its control, and that the other consents so to act.”).

282. Critically, the courts have made clear that a principal cannot be held liable under a nuisance theory for the actions of an independent contractor unless the principal substantially controlled *the specific nuisance-causing activity*, as opposed to other activities, *at the time the nuisance occurs*. *See Burlington N. & Santa Fe Ry. v. Grant*, 505 F.3d 1013, 1026 (10th Cir. 2007) (nuisance requires control or substantial participation in the nuisance-causing activity); *State v. Lead Indus. Ass’n, Inc.*, 951 A.2d 428, 449 (R.I. 2008) (“[A] defendant must have control over the instrumentality causing the alleged nuisance at the time the damage occurs.”) (emphasis omitted); *In re Lead Paint Litig.*, 924 A.2d 484, 488-91 (N.J. 2007) (same). Thus, in this case the relevant question is whether the Defendants control the poultry Growers’ decisions about whether, where, how, and how much poultry litter to apply to the land.

283. Applying these factors, it is clear on the record that the poultry Growers are independent contractors, and not agents of the Defendants for purposes of deciding how and when to use or sell poultry litter as a fertilizer.

284. First, the contracts in question provide that Growers are independent contractors, not employees. *See, e.g.*, Ok. Ex. 6269-A1, Ok. Ex. 6269-A2, Ok. Ex. 6269-A3, Ok. Ex. 6269-A4, Ok. Ex. 6269-A5, Ok. Ex. 6269-A6, Ok. Ex. 6564-A, Ok. Ex. 6564-B, Ok. Ex. 6564-C; DJX1814; Tr. at 3423:22-3424:9, 3425:5-21, 3426:5-14 (Pilkington); 4301:21-4302:1 (Murphy). *See Dierks Lumber & Coal Co. v. McDaniel*, 112 P.2d 1082, 1084 (Okla. 1941) (“[I]t is necessary to look first to the contract and the practices under it, together with the results to be accomplished”) (citations omitted); *Page*, 334 P.2d at 784-85.

285. Company representatives confirmed their understanding that the Growers are not employees. Tr. at 4733:1-3, 4734:10 (Maupin); 3412:1-8 (Pilkington); 4301:21-4302:1 (Murphy); 3025:14-18, 3046:10-11 (M. Henderson). The companies do not treat the Growers as employees and do not deduct income taxes from payments to Growers. Tr. at 3412:18-20 (Pilkington); 4301:18-20 (Murphy); 4492:3-5 (Reed); 3926:9-10 (Collins).

286. The Growers (who were selected and called to the witness stand by the State, not by Defendants) similarly testified uniformly and without contradiction that they view themselves as independent contractors, and not as employees of the Defendants with whom they contract. Tr. at 4514:9-12 (Reed); 3926:15-3927:4 (Collins); 4084:19-20 (Anderson).

287. A number of other factors help define the nature of the relationship between the Growers and the poultry companies. For example, poultry Growers own all the land, farm, and equipment. Tr. at 3841:8-11 (Pigeon); 4491:7-8 (Reed); 4940:22-4941:4, 4942:17-19 (Alsup); 4300:22-24, 4301:4-5 (Murphy); 3413:18-21, 3414:17-25 (Pilkington); 6918:4-18 (Taylor).

288. The evidence shows that poultry Growers are independent business men and women supplying “the instrumentalities, tools and the place of work,” paying their own expenses and hiring their own personnel. *Page*, 334 P.2d at 785; *see Mistletoe Express Serv., Inc. v. Culp*, 353 P.2d 9, 12 (Okla. 1959); *Cook Constr. Co. v. Longcrier*, 405 P.2d 165, 168 (Okla. 1965). It moreover demonstrates that the Growers are “engaged in a distinct operation,” which requires development of specialized skills not utilized by the poultry company itself. *Page*, 334 P.2d at 784-85; *see, e.g., Fairmont Creamary Co. v. Carsten*, 55 P.2d 757, 761 (Okla. 1936) (per curiam) (affirming status as an independent contractor). The record is that poultry Growers here are their own “boss,” Tr. at 4088:5-6 (Anderson); 4491:9-12 (Reed), responsible for the day-to-day running of their farms, including hiring employees, Tr. at 4087:23-4088:4 (Anderson); 4301:6-7, 4301:11-15 (Murphy); 3415:1-3, 3415:8-15 (Pilkington); 6918:19-21 (Taylor), making management decisions, Tr. at 4085:5-22 (Anderson); 4491:20-22 (Reed); 4598:15-4599:22 (Saunders); 4940:22-4941:25, 4948:9-11 (Alsup); 4301:8-10 (Murphy); 3415:4-7 (Pilkington), and paying for their own expenses, Tr. at 4491:23-25 (Reed); 4300:25-4301:3 (Murphy); 3414:10-16 (Pilkington); 6918:22-24 (Taylor).

289. The record does reflect Defendants’ interest in the actual raising of the birds. Defendants acknowledge that they retain ownership of the birds, and provide feed, medicine and technical advice. The State has suggested that Defendants control their Growers by means of the companies’ service or field techs who frequently visit grower farms. The record evidence is to the contrary. For example, Joel Reed, who has grown poultry for Simmons since 1990, testified he does not follow the standard company recommendations regarding temperature settings and cake-out frequency. Tr. at 4465:21-23, 4502:13-23, 4503:19-4504:5. Jim Pigeon, a Tyson Grower, testified that he has elected to disregard recommendations from his service tech, but has

never been “terminated, or threatened with termination, ... for failing to follow a service tech’s recommendation.” Tr. at 3842:20-3843:6. Al Saunders, a Peterson grower, acknowledged receiving advice from service techs, but was free to follow his own judgment. Tr. at 4540:12-22, 4542:1-13 (Saunders: “Q. And do you know what would happen if you don’t heed the advice and do what they request you to do? A. Nothing.”). And, none of the Defendant representatives called by the State testified that a grower had been terminated because of a grower’s failure to follow service technician recommendations. *See, e.g.*, Tr. at 4769:3-24 (Maupin); *see also* 3046:7-18, 3049:10-11 (M. Henderson); 3397:2-7, 3419:3-7 (Pilkington); 4946:8-15, 4954:15-21 (Alsup).

290. Even if Growers could be considered employees or agents with respect to poultry growing, that relationship still does not reach the alleged injury-causing conduct, the subsequent disposition of poultry litter. *See, e.g., Rodebush v. Oklahoma Nursing Homes, Ltd.*, 867 P.2d 1241, 1245 (Okla. 1993); *Haco Drilling Co. v. Burchette*, 364 P.2d 674, 677 (Okla. 1961); *Roring v. Hoggard*, 326 P.2d 812, 814 (Okla. 1958) (per curiam); *Brayton v. Carter*, 163 P.2d 960, 962 (Okla. 1945) (per curiam); *Patsy Oil & Gas Co. v. Odom*, 96 P.2d 302, 307 (Okla. 1939).

291. Both the poultry growing contracts and the Growers’ testimony confirms that the Defendants had neither the right nor authority to enter upon or inspect Growers’ lands or operations beyond the poultry growing area, which precluded Defendants’ right to control how Growers managed their lands, including the use of poultry litter to produce forage. *See* DJX1814; Tr. at 4844:15-24 (Houtchens); 4579:6-17, 4589:12-14 (Saunders).

292. The record lacks any proof that Defendants in any way control or direct Growers’ disposition of their poultry litter. Tr. at 3734:1-9 (Pigeon); 4096:3-15 (Anderson); 4491:13-16,

4493:15-4494:1 (Reed); 4588:5-9, 4588:20-25 (Saunders); 3914:14-3915:3 (Collins); 4802:10-14, 4844:15-24 (Houtchens); 4300:9-16 (Murphy); 4954:12-4955:7 (Alsup); 3419:20-3420:12 (Pilkington); 4449:6-18 (S. Storm); *see also* 3949:13-18, 3952:23-3953:3 (Collins). Indeed, the only evidence in this line is Defendants' contractual requirement that Growers abide by applicable laws including environmental laws and animal waste management plans. Tr. at 4834:7-22 (Houtchens); 4308:25-4309:4 (McClure); Ct. Ex. 7 (Butler Dep.), at 20:19-21:1, 21:4-6; *see also* 3914:14-18 (Collins). The State's economics expert agreed that Growers have full control over the poultry litter. Tr. at 6831:3-11, 6909:2-9, 6953:9-12 (Taylor).

293. The Growers' testimony in fact was that Growers themselves demand unilateral control over the poultry litter on account of its economic value. Growers rely on the litter that results from their poultry raising operations to support other farm activities such as cattle ranching, or as a source of cash income or for barter. Tr. at 1446:14-1447:11 (Phillips); 4555:15-4556:2, 4570:15-21, 4570:2-8, 4574:8-19, 4590:19-4591:10, 4606:11-4607:25 (Saunders); 3856:11-23 (Pigeon); 4473:22-24, 4490:4-4491:6, 4497:1-4498:3 (Reed); 4089:13-4090:4 (Anderson); *see also* Tr. at 3958:4-3959:8 (D. Henderson) (it is common for farmers to own both poultry and cows and to use the litter to raise forage); 4421:19-4422:2 (S. Storm) ("Typically one of the benefits of a contractual relationship [with a poultry company] is that the contract grower wants the manure for their own land for fertilizing purposes.").

294. Consistent with this understanding, Growers retain the proceeds derived from any sale or barter of their poultry litter. Tr. at 3856:11-23 (Pigeon); 4491:17-19, 4497:1-12, 4500:4-10 (Reed); 4300:17-19 (Murphy); 4958:21-23 (Alsup); 3419:24-3420:2 (Pilkington). Most contracts do not explicitly address ownership of poultry litter, but they do provide specifically

that the poultry companies retain ownership of feed, medicine, and other similar supplies.²⁸

Accordingly, both Growers and the companies understand that poultry Growers own the litter. Tr. at 4088:24-4089:23 (Anderson); 4496:2-9 (Reed); 4545:17-22 (Saunders); 3026:18-3027:1 (M. Henderson); 4687:12-19, 4763:4-11 (Maupin); 4797:1-9, 4802:10-17 (Houtchens); Court Ex. 6 (Wear Dep.), at 55:7-14.

295. Growers can and do change the poultry companies with which they contract. Tr. at 4465:2-8, 4489:21-4490:3 (Reed); 4599:23-4600:5 (Saunders); 3722:19-25 (Pigeon); 3413:7-17 (Pilkington); 4299:17-4300:2 (Murphy).

296. The State has suggested that these contractual provisions and actual practices should be ignored because the Defendants exercise market power to unilaterally impose these terms and conditions. But, the State's economic expert conducted no analysis of the factors that would allow a finding that integrators possess market power in the IRW. Tr. at 6764:6-8, 6808:19-6809:1, 6818:9-14, 6819:1-11 (Taylor). To the contrary, the economic analysis presented in this case demonstrates that the Defendants possess no market power over poultry Growers that would curtail the Growers' independence. Tr. at 6814:12-22 (Taylor); 10125:15-10126:2 (Rausser).

297. In sum, the evidence at trial demonstrated that Defendants contract with poultry Growers to raise poultry. All of the State's evidence of "control" addressed issues relating to the quality of the birds that are raised—not to the use of poultry litter as a fertilizer. The evidence showed that poultry Growers own and manage their own farms and that many grow hay, raise

²⁸ Peterson contracts explicitly state that Growers own the poultry litter and that they shall retain all economic benefits from the use or disposition of the litter. *See* DJX1814 at 3; Tr. at 6774:7-12 (Taylor).

cattle, or are otherwise engaged in agricultural activities beyond raising poultry. The evidence established that Defendants do not control poultry Growers' work on their farms—including the utilization of their poultry litter by application, sale, barter, or export. Rather, the evidence showed that the only control Defendants exert over poultry litter is to mandate that, if poultry Growers who are under contract elect to apply poultry litter to their own land, they must do so pursuant to a state-issued litter management plan.²⁹

C. Applications of Restatement (Second) 427B to Defendants' Relationship with Contract Growers

298. In order to circumvent the traditional bar on a principal's liability for independent contractors the State invokes Restatement (Second) of Torts § 427B, which provides:

One who employs an independent contractor to do work which the employer knows or has reason to know to be likely to involve a trespass upon the land of another or the creation of a public or a private nuisance, is subject to liability for harm resulting to others from such trespass or nuisance.

The State contends that Defendants contract with poultry Growers "to do work" that "includes the land application of poultry waste," which in turn Defendants know is likely to result in a nuisance or trespass. *See* State's Trial Br., Dkt. No. 2627 at 19.

299. The State's invocation of Section 427B will be rejected because Section 427B has not been adopted in either Oklahoma or Arkansas law.

300. Under Oklahoma law the State relies principally on *Tankersley*, 243 P. 745. That case, however, suggests strongly that Section 427B is not compatible with Oklahoma law. The plaintiff in *Tankersley* was injured after picking up and playing with a blasting cap left at a

²⁹ Significantly, courts have rejected the argument that control may be established from contractual provisions requiring compliance with applicable laws. *See Concrete Sales & Servs., Inc. v. Blue Bird Body Co.*, 211 F.3d 1333, 1339 (11th Cir. 2000) (per curiam); *Jordan v. Southern Wood Piedmont Co.*, 805 F. Supp. 1575, 1580 (S.D. Ga. 1992).

construction site. The plaintiff sued the general contractor, who defended arguing that responsibility lay with the independent subcontractor who had used the blasting caps in excavating the foundations for the new school building. *See id.* at 746-47. The court recognized and applied the general rule that a principal is not responsible for the conduct of the independent contractor. *See id.* at 747-48. The court noted a possible exception where “the performance of a specific job by an independent contractor in the ordinary mode of doing the work necessarily or naturally results in causing an injury.” *Id.* at 747. Had the plaintiff demonstrated, the court observed, that the excavation necessarily required the blasting, and had such required blasting caused the injury, then the outcome might have been different. *See id.* at 747-48. Thus, the *Tankersley* court did not invoke the rule proposed in Restatement § 427B, but rather applied the “inherently dangerous activity” rule reflected in Restatement §§ 427 and 427A—which applies to activities that “necessarily or naturally result[] in causing an injury.” *Tankersley*, 243 P. at 747.³⁰ Section 427B proposes a much looser standard of vicarious liability pertaining to conduct merely “likely to” cause a trespass or nuisance. *Tankersley* lends no support to the State’s invitation to read Section 427B into Oklahoma law.

301. Section 427B similarly appears to have no place in Arkansas law. Neither party has identified any Arkansas authority applying or even discussing this exception to general

³⁰ Section 427 provides that a principal who “employs an independent contractor to do work involving a special danger to others which the employer knows or has reason to know to be inherent in or normal to the work, or which he contemplates or has reason to contemplate when making the contract, is subject to liability for physical harm caused to such others by the contractor’s failure to take reasonable precautions against such danger.” Section 427A provides a similar rule, that a principal who “employs an independent contractor to do work which the employer knows or has reason to know to involve an abnormally dangerous activity, is subject to liability to the same extent as the contractor for physical harm to others caused by the activity.” Restatement (Second) of Torts §§ 427 & 427A.

agency principles. As in Oklahoma, it is unlikely that Arkansas has or would adopt Section 427B's vicarious liability standard. Only just recently, in *Stoltze*, 127 S.W.3d 466, the Arkansas Supreme Court held that Arkansas has recognized three exceptions to the general rule that an principal is not responsible for the negligence of an independent contractor: (1) where the principal is negligent in hiring the contractor; (2) where the principal negligently fails to perform certain duties the principal has undertaken or performs them in a negligent manner; and (3) where the principal delegates to an independent contractor work that is inherently dangerous. *See id.* at 470. None of these exceptions apply to the facts of the case at bar.

302. Application of Section 427B to relationships in Arkansas would moreover run directly contrary to Arkansas law, which expressly exempts Growers against liability from the use of litter following its sale or transfer to third-parties. *See* Ark. Code Ann. § 15-20-1109(a) ("Upon sale or transfer of poultry litter from a poultry feeding operation within a nutrient surplus area to any user, the poultry feeding operation shall not be responsible for the ultimate utilization of the poultry litter."); 138-00-022 Ark. Code R. § 2205.1 (same).

303. Nor does Section 427B appear to apply to the facts of this case. The State contends that under this rule Defendants should be liable because a nuisance or trespass is a foreseeable consequence of the work the Growers are retained to do. But any analysis of the meaning of Section 427B must begin with its text. Section 427B on its face applies to "[o]ne who employs an independent contractor to do work." Restatement (Second) Torts § 427B. Its application is thus circumscribed by the particular work that a party has employed an independent contractor to perform. That plain meaning is conclusive of the State's argument. *American Int'l Ins. Co. of Puerto Rico v. Lampe GmbH*, 397 F. App'x 645, 649 n.3 (3d Cir. 2009); *Kennedy v. Children's Serv. Soc'y of Wisc.*, 17 F.3d 980, 984-85 (7th Cir. 1994); *Cyr v. B.*

Offen & Co., 501 F.2d 1145, 1155 (1st Cir. 1974); *Bank of New Orleans & Trust Co. v. Monco Agency, Inc.*, 719 F. Supp. 1328, 1331 (E.D. La. 1989).

304. The record is that Defendants contract with poultry Growers to raise poultry, not to land apply poultry litter. To the contrary, the uncontroverted testimony from the poultry Growers is that they agree to raise birds for Defendants because they want access to poultry litter for their own purposes. *See supra* ¶ 293. Moreover, the record is devoid of any evidence suggesting that Defendants hire Growers to land apply litter, or in any way control, direct, or profit from Growers disposition of their poultry litter.

305. Separately, the record does not support the contention that a nuisance or a trespass is a likely and foreseeable result of contracting for the raising of poultry. In dismissing the State's claim for nuisance *per se*, the Court concluded that land application of poultry litter does not always result in nuisance pollution. Tr. at 8352:2-8353:5. Moreover, as noted above, Defendants' contracts with the Growers uniformly require the Growers to have an animal waste management plan and to abide by applicable laws, including environmental laws. Those laws and plans are drafted by soil scientists who are agents of the State, applying the state-of-the-science as to phosphorous transport. *See supra* ¶¶ 39-125. The State has not presented any substantial evidence that these plans are flawed or routinely disregarded.

306. Moreover, company representatives testified uniformly that they rely on the States' regulations, including Animal Waste Management Plans and Nutrient Management Plans, to establish the limits at which poultry litter can be safely applied to fields. Tr. at 3316:14-3317:6 (Keller); 4143:24-4144:16, 4146:12-17 (Simmons); 4294:24-4295:13, 4295:22-4296:4 (Murphy); 4308:25-4309:4 (McClure); 4450:23-4451:7 (S. Storm); 4732:5-4733:3, 4734:14-4735:5, 4735:16-4736:9, 4771:21-4773:4, 4777:19-4778:7 (Maupin); 4797:12-24, 4809:23-

4810:13, 4831:15-23, 4832:13-19, 4834:7-4835:9, 4839:5-25 (Houtchens); 4860:23-4861:6 (Alsup); Court Ex. 7, Deposition of Leasea Butler at 78:7-15.

307. In light of Oklahoma’s and Arkansas’s regulatory schemes, designed to minimize the transport of phosphorous on a field-specific basis, it is neither foreseeable nor likely that abiding by those schemes and plans will result in a nuisance. Therefore, the State may not invoke Section 427B to impose liability on Defendants for the conduct of their independent contractor Growers.

308. Notably, this same analysis fatally undercuts the State’s claim that the Defendants intentionally caused a nuisance or trespass, that is, that the land application of poultry litter was “substantially certain” to cause pollution. *See* Restatement (Second) of Torts § 825. Having pleaded intentional torts, the State bore the burden of proving that it was known that the application of poultry litter would result in the alleged injuries. In light of the regulatory programs set out *supra*, and Defendants’ and Growers’ reliance thereupon, the Court concludes State has failed to prove that any of the Defendants knew that pollution is “substantially certain to result” from one of its grower’s land application of poultry litter. *See* Restatement (Second) of Torts § 825.

D. Applications of Restatement (Second) 427B to the Use of Poultry Litter by Ranchers, Farmers and Others Who Have No Contractual Relationship With Defendants

309. Even if Section 427B had some application under Oklahoma and Arkansas law to Defendants’ relationship with the poultry Growers, the State seeks to apply the Restatement to a much broader universe of actors. The State asserts that the Court should hold Defendants liable for the actions of third parties who have no contractual relationship with Defendants whatsoever but who instead buy and use poultry litter in the commercial marketplace.

310. The Court previously ruled that Restatement (2d) of Torts § 427B does not allow

Defendants to be held liable for the actions of the thousands of persons who have no contractual relationship with Defendants, but who buy, sell and use poultry litter on the open market for use as a fertilizer. *See* Sept. 4, 2009 Hrg. Transcript at 239-244:10; 244:5-10 (“THE COURT: [W]hether it’s a sale or to give away to a third person, if the person is not an independent contractor, then 427B doesn’t apply. 427B is constrained by its language. Words have meaning. So that will be the Court’s ruling.”).

311. The Court withdrew that ruling to allow the State to present all of its evidence on this point. *See* Tr. at 7869:23-7870:1. The State presented no additional evidence on this issue.

312. Section 427B does not have the reach the State would read into it. As a matter of plain English, this provision is limited to the particular work that a party has employed an independent contractor to perform. *See* Sept. 4, 2009 Hrg. Transcript at 219:8 – 233:1. It is not contested that Defendants do not contract for any work from these third-party non-parties.

313. The State contends that the touchstone of Section 427B is foreseeability—that Defendants are liable for any nuisance or trespass caused by any person’s use of poultry litter so long as it is foreseeable that someone might misuse poultry litter in that manner. But this argument expands 427B liability beyond its borders. *See id* at 240:3-10 (“THE COURT: And I do think that the defendants are correct with regard to the application of 427B. I think the language of 427B is restricted or restricts the concept of foreseeability to a situation where one employees an independent contractor and doesn’t go beyond that, although I very much appreciate plaintiff’s counsels, Mr. Baker’s and Mr. Bullock’s arguments regarding general foreseeability. I just don’t think 427B is the tool to get you that far.”).

314. The official comments to Section 427B confirm this plain-text meaning. Comment (b) provides that the Restatement’s exception:

applies in particular *where the contractor is directed or authorized by the employer to commit such a trespass, or to create such a nuisance, and where the trespass or nuisance is a necessary result of doing the work, as where the construction of a dam will necessarily flood other land....*

Id. (emphasis added).³¹

315. The Restatement also provides illustrations of the Rule's application, each of which makes clear that Section 427B's exception only applies to situations where an independent contractor creates a nuisance or trespass:

1. *A employs B, an independent contractor, to construct a dam in a stream on A's land. A knows or has reason to know that the work on the dam makes it likely that in the event of heavy rainfall land upstream will be flooded. Before the dam is completed a spring freshet occurs, which floods such land of C. A is subject to liability to C.*

2. *A employs B, an independent contractor, to excavate on A's land. The contract calls for blasting. A knows or has reason to know that it is likely that concussion from the blasting will damage C's adjoining house, and that dust from the blasting will create a traffic hazard on the public highway. The concussion loosens plaster in C's ceiling, which falls on C's head and injures him. The dust cloud on the highway causes a collision between automobiles driven by D and E. A is subject to liability to C, D, and E.*

Id. (emphasis added). The State has identified nothing in the Restatement or in its supporting materials that justifies further extending Section 427B to the situation the State presents.

316. In light of this plain text, the Court rejects the argument that Section 427B applies to work that is performed by someone other than an independent contractor. Indeed, because of this plain meaning, counsel for the State conceded at oral argument that Section 427B cannot be applied in a situation where the work in question was not performed by an independent contractor. *See* Ex. A 226:11-14 (“MR. BULLOCK: Well, first of all, of course, if we don’t have a subcontractor then 427B doesn’t apply. Okay. I mean by its terms. I can’t win that

³¹ *See* Ex. A at 223:4-7 (“THE COURT: I understand the general argument of foreseeability, but the comment b talks about a contractor and an employer. In a case where someone sells the product there is no contractor and there is no employer.”).

argument that 427B applies, gives you liability where there's no subcontractor.”)

317. The State has argued that the “work” poultry Growers perform in this case is to transfer poultry litter to other third parties, and that liability therefore follows the poultry litter to make Defendants liable for the decisions of those third parties about how, when, and where to apply the litter they purchased. The Court has already considered and rejected this argument as well. *See* State’s Response to Defendants’ Motion in Limine, Dkt. No. 2498 at 4; Sept. 4, 2009 Hrg. Transcript at 215:12–215:15; 219:4–220:5³²; 233:9–244:10. This is a theory of strict product liability, which the State did not plead in this case. *Id.* Under this theory, the liability follows the product regardless of whether the ultimate person is in contractual privity with a Defendant. Of course, it is the work (and decisions) of this ultimate person that determines whether poultry litter is used in a manner that allegedly causes a nuisance or trespass. For this reason the Court dismissed the State’s claim of nuisance *per se*. Tr. at 8352:2–8353:5.

³² “THE COURT: Well his point wasn’t so much as to the percentage but that some amount that is sold. I mean his point is the dividing line is that which is purchased or bartered is no longer within the ambit of 427B.

MR. BAKER: And I understand that point. And that’s going to be a very important point in a few minutes in my argument because it shows that they know that poultry waste is being transferred to third persons to handle the disposition of it, the integrators know that. And that gets into my next point which is the key is foreseeability. We have to come back to foreseeability. Reason to know that something that’s going to happen from the work. What is foreseeable by the integrators from the contract work with the Growers is A, that massive amounts of poultry waste are going to be generated, the waste has to be gotten rid of, the waste is land applied in a concentrated area, and that land applied poultry waste will result in a nuisance or trespass. You can’t manipulate the operation of 427B by simply having, adding intermediaries. The focus is always going to come back to foreseeability.

THE COURT: Well, but his argument as I understand it, their argument, the defendants, is that 427B although it – I think you’re right, it turns on foreseeability, it has limits. It’s not a theory of strict liability where foreseeability extends out as far as that unreasonably dangerous or inherently dangerous product may go in the marketplace, but only so far as one employs an independent contractor and that once that product is sold then 427B doesn’t apply.”

318. The State relied on *McQuilken v. A & R Development Corp.*, 576 F. Supp. 1023, 1033 (E.D. Pa. 1983), which states that “[a]n employer or contractor is held liable for ‘farming out’ work which he knows, or has reason to know, will create a nuisance.” *Id.* But, as the Court previously noted, *McQuilken* only involved a situation where a principal hired independent contractors to do work; it did not extend liability to subcontractors, let alone to individuals without any contractual or other relationship with the principal. Thus, *McQuilken* does not support the State’s argument. *See id.*; Ex. A at 214:4 – 215:13 (“THE COURT: But not even the facts, as I read it and maybe I’m reading it incorrectly and either one of you can correct me, but as I read it this doesn’t go as far as the plaintiffs want to go.”).

319. For the foregoing reasons, the State’s Section 427B argument cannot prevail and Defendants cannot be held responsible for the use of poultry litter by third party non-parties with whom they have no relationship, contractual or otherwise.

320. The record is not clear as to the amount of poultry litter that is transferred to third parties, but does establish that a substantial amount is transferred. *See* Tr. at 3734:4-12 (Pigeon: sells litter to his neighbors); 3892:8-15, 3901:10-16 (Collins: he markets, sells, moves, and spreads the litter he cleans out); 4471:19-21 (Reed: sold litter to neighbors); 3959:4-8 (D. Henderson); *see also* 1447:3-10 (Phillips: confirming litter is sold); 2904:19-22 (Gunter: describing statutory requirement that Growers record to whom they sell or transfer litter); *see also, e.g.*, Ok. Ex. 2825B at OKDA0008778, 8783, 8784, 8789, 8790, 8795, 8796, 8803 (non-comprehensive list of STP results for non-Growers). The State, however, failed to introduce any evidence assessing poultry litter application, transport, or injury net of these third party uses. Therefore, the State has failed to prove causation as to the relevant universe of poultry litter. This basis is sufficient to dismiss each of the State’s remaining claims.

V. STATE COMMON LAW PUBLIC NUISANCE

A. Authorization, Causation, and Agency

321. On the commonly applicable bases for judgment set forth above, the Court concludes that the State has failed to meet its burden to prove that Defendants are liable for causing a public nuisance under Oklahoma common law.

322. Judgment must be entered in favor of Defendants as to the state law public nuisance claim because performance of the alleged conduct is legally authorized by the State of Oklahoma.

323. Judgment must also be entered in favor of Defendants because the State failed to meet its burden as to either general or Defendant-specific causation.

324. Judgment must be entered in favor of Defendants because the record evidence demonstrates that Defendants do not participate in or control the land application of poultry litter, and cannot be held liable for the conduct of their Growers based on common law employment and agency principles or upon the principles set forth in the Restatement (Second) of Torts § 427B.

B. The State has not Demonstrated Injury in Oklahoma Arising from Conduct Occurring in Oklahoma

325. As the Court ruled prior to trial, the State's claim for state law public nuisance applies only to conduct occurring within the State of Oklahoma, and thus does not extend to land

application of poultry litter occurring in Arkansas. *See* Aug. 18, 2009 Hrg. Tr. at 188:7-11 (Dkt. No. 2548) (Aug. 31, 2009).³³

326. The State failed during the course of the trial to introduce any substantial evidence demonstrating injury occurring in Oklahoma resulting solely from conduct in Oklahoma. Instead, the State elected to try this case principally on a watershed-wide basis: Olsen’s “gradient” analysis, Fisher’s “ratios” analysis, and Engel’s modeling work each took the watershed as an undifferentiated whole. The State presented precious little Oklahoma evidence net of Arkansas. As such, the State’s proof fails as to its state common law nuisance claim.

VI. FEDERAL COMMON LAW NUISANCE

327. The State alleges that the application of poultry litter to pastures across the watershed in Arkansas and Oklahoma combine to cause injury in Oklahoma in violation of the federal common law of nuisance.

A. Causation and Agency

328. For the reasons set out above, judgment is appropriate in Defendants’ favor on this claim as the State has failed to meet its burden as to causation.

329. For the reasons set out above, judgment is appropriate in Defendants’ favor on this claim as the State has failed to meet its burden to establish agency.

B. The Federal Common Law of Nuisance has been Displaced by Federal Statutory and Administrative Law With Regard to Water Pollution

³³ While the Court resolved the issue of extraterritorial application of Oklahoma state nuisance law prior to trial, the Court did not similarly resolve that same question as to Oklahoma state trespass law. The relevant legal principles are therefore discussed *infra* in the Court’s discussion of the State’s trespass claim. The rules of law set out therein are equally applicable to and support the Court’s ruling with regard to Oklahoma’s state law nuisance claim.

330. As a general matter “[t]here is no federal general common law.” *Erie R.R. v. Tompkins*, 304 U.S. 64, 78 (1938); *see, e.g., Milwaukee v. Illinois*, 451 U.S. 304, 312 (1981) (“Federal courts, unlike state courts, are not general common-law courts and do not possess a general power to develop and apply their own rules of decision.”) (“*Milwaukee II*”). Federal common law thus exists in only a handful of discrete areas. *Id.* at 313; *see also id.* at 314 (referring to federal common law as “an unusual exercise of lawmaking by federal courts”).

331. Where federal common law persists, Congress may readily displace it. *Id.* at 312-13; *Illinois v. Milwaukee*, 406 U.S. 91, 107 (1972) (“*Milwaukee I*”). The bar for displacement is low as federal common law is “displaced” wherever Congress has merely “spoken to [the] particular issue” and “the scheme established by Congress addresses the problem formerly governed by federal common law.” *Milwaukee II*, 451 U.S. at 313, 315 n.8; *see also United States v. Oswego Barge Corp.*, 664 F.2d 327, 335 (2d Cir. 1981) (federal common law is displaced “as to every question to which the legislative scheme ‘spoke directly,’ and every problem that Congress has ‘addressed’”). Unlike preemption of state law by federal law, which is disfavored, displacement of federal common law is favored “whenever it can be said that Congress has legislated on the subject.” *Oswego Barge Corp.*, 664 F.2d at 335 (citing *Milwaukee II*, 451 U. S. at 315).

332. Importantly, Congress need not create an alternative remedy in order to displace federal common law. Instead, courts will respect Congress’s decision *not* to regulate in a particular area. As the Seventh Circuit observed, “once Congress has addressed a national concern, our fundamental commitment to the separation of powers precludes the courts from scrutinizing the sufficiency of the congressional solution.” *Illinois v. Outboard Marine Corp.*, 680 F.2d 473, 478 (7th Cir. 1982). Courts should thus evince a “willingness to find

congressional displacement of federal common law.” *Milwaukee II*, 451 U.S. at 317 & n.9 (emphasis omitted).

333. The Clean Water Act, designed to protect the nation’s waters, is implemented through a balanced federal-state partnership. CWA § 101(a), 33 U.S.C. § 1251(a). The Water Quality Act of 1987 extensively amended the CWA. Pub. L. No. 100-4, 101 Stat. 7 (1987).

334. The CWA principally addresses point sources, *see Arkansas v. Oklahoma*, 503 US. 91, 99 (1992); *Milwaukee II*, 451 U.S. at 325, but, particularly as amended, it also speaks to nonpoint source pollution. *See, e.g.*, 33 U.S.C. § 1329 (“Nonpoint source management programs”); 68 Fed. Reg. 60,653, 60,655 (Oct. 23, 2003) (“Section 319[, enacted] in 1987, establish[ed] a national program to control nonpoint sources of water pollution.”); H.R. Rep. No. 99-1004 at 141-45 (1986) (section titled “Management of Nonpoint Sources of Pollution” directing that “a national policy that programs for the control of nonpoint sources of pollution be developed and implemented in an expeditious manner”); S. Rep. No. 99-50 at 33-43 (section titled “Nonpoint Source Pollution” discussing amendments that “require development of implementation programs to control nonpoint source pollution.”); H.R. Rep. No. 99-189 at 8 (1985) (sections titled “Policy for Control of Nonpoint Sources of Pollution” and “Control of Nonpoint Sources of Pollution” discussing “the national policy that plans for the control of nonpoint source pollution be developed and implemented”). Under Congress’s direction, the EPA has promulgated administrative standards regulating nonpoint source pollution. *See* 40 C.F.R., Pts. 130, 131 (containing nonpoint source management standards).

335. The CWA addresses nonpoint source pollution in Section 303 (governing federal oversight of each State’s development of Water Quality Standards) and Section 319 (requiring

States to comply with detailed federal reporting and planning requirements for nonpoint sources) in order to reduce nonpoint source pollution.

a. First, each state must develop water quality standards specifying for each water body (1) a designated use; (2) the maximum amount of pollutants it can tolerate while serving that use; and (3) an anti-degradation review policy. These standards account for nonpoint source pollution. *See, e.g.*, 33 U.S.C. § 1313(c)(2), CWA § 303(c)(2); 40 C.F.R. § 131. EPA reviews these standards and plans and may approve or reject them, or require the submitting State to make changes. 33 U.S.C. § 1313(c)(2)-(3), CWA § 303(c)(2)-(3). “EPA provides states with substantial guidance in drafting water quality standards,” which address both point and nonpoint source pollution within a watershed. *City of Albuquerque v. Browner*, 97 F.3d 415, 419 n.5 (10th Cir. 1996) (citing 40 C.F.R. § 131.11).

b. When CWA standards are not met, the State must list and prioritize any “impaired” waters. 33 U.S.C. § 1313(d)(1)(A) & (B), CWA § 303(d)(1)(A) & (B). For each, the State must calculate the Total Maximum Daily Load (“TMDL”) of pollutants that the water body can receive without exceeding the EPA-approved Water Quality Standards. The TMDL process addresses both point and nonpoint sources of pollutants. 33 U.S.C. § 1313(d)(1)(C), CWA § 303(d)(1)(C); 40 C.F.R. § 130.7. EPA favors this approach as it “represent[s] the current state of the art in fashioning watershed-based solutions to prevent and remedy water quality problems” from both point and nonpoint sources. 68 Fed. Reg. at 60,654.

c. Thus, the CWA addresses nonpoint sources by working with States to develop standards that account for nonpoint source pollution. *See Pronsolino v. Nastri*,

291 F.3d 1123, 1128-29 (9th Cir. 2002) (“TMDLs serve as a link in an implementation chain that includes federally-regulated point source controls, state or local plans for point and nonpoint source pollution reduction, and assessment of the impact of such measures on water quality, all to the end of attaining water quality goals....”). *See Sierra Club v. Meiburg*, 296 F.3d 1021, 1025 (11th Cir. 2002) (“TMDLs are central to the Clean Water Act’s water-quality scheme because . . . they ‘tie together point-source and nonpoint-source pollution issues in a manner that addresses the whole health of the water.’”).

d. The 1987 amendments to the CWA, Pub. L. No. 100-4, 101 Stat. 7, imposed additional obligations regarding nonpoint sources under Section 319. Under CWA § 319, each State must submit a State Assessment Report to EPA identifying (1) impaired waters “which, without additional action to control nonpoint sources of pollution, cannot reasonably be expected to attain or maintain applicable water quality standards . . .”; (2) categories and subcategories of nonpoint sources and “particular nonpoint sources which add significant pollution” to impaired waters; (3) a process to develop best management practices (“BMPs”) for controlling each nonpoint source pollution “to the maximum extent practicable”; and (4) programs to control nonpoint source pollution. 33 U.S.C. § 1329(a)(1), CWA § 319(a)(1). This process is not optional. EPA may reject or require modifications to each State’s plan, 33 U.S.C. § 1329(d)(2), CWA § 319(d)(2), and may prepare its own report if the State refuses to comply, 33 U.S.C. § 1329(d)(3), CWA § 319(d)(3).³⁴

³⁴ As further evidence of the displacing effect of the CWA, the 1987 Amendments included the repeal of the savings clause which served as the principal basis of the Court’s decision in *Milwaukee I*. See H.R. Rep. No. 92-911 at 173 (1972) (listing former §10(b) of the Federal Water Pollution Control Act among the “Existing Law” supplanted by the CWA).

e. Congress also established a mechanism for settling multi-state disputes regarding nonpoint source pollution of interstate waters. Under CWA § 319(g), any State may petition the Administrator for an Interstate Management Conference to address impacts from “nonpoint sources in another State.” The Administrator must coordinate “an agreement among such States to reduce the level of pollution in such portion resulting from nonpoint sources” to be reflected in revisions to each state’s nonpoint source management program. *Id.*

f. Both Oklahoma and Arkansas have participated in the CWA’s comprehensive nonpoint source regulatory scheme under Sections 303 and 319 of the CWA. *See, e.g.*, 69 Fed. Reg. 63,079 (Oct. 29, 2004) (approving revisions to Arkansas’s Water Quality Standards); 66 Fed. Reg. 29,951 (June 4, 2001) (EPA approval of revisions to Oklahoma’s Water Quality Standards).

336. The Supreme Court has stated repeatedly that the CWA has fully displaced federal common law in the area of water pollution. *See Middlesex County Sewerage Auth. v. National Sea Clammers Ass’n*, 453 U.S. 1, 21-22 (1981) (“[T]he federal common law of nuisance in the area of water pollution is entirely pre-empted by the more comprehensive scope” of the revised CWA); *see also Int’l Paper Co. v. Ouellette*, 479 U.S. 481, 489, 492 (1987) (stating that Congress intended for the CWA to “dominate the field of [interstate water] pollution regulation” and noted that it had previously “held that federal legislation now occupied the field, preempting all federal common law.”). While *Middlesex County Sewerage* concerned point sources, the Court’s language was clear, emphatic and encompasses the entire area of nuisance claims based on water pollution.

337. In light of *Milwaukee II* and *Middlesex*, numerous lower courts have concluded that “the FWPCA displaced federal common law *in the entire area of water pollution*.” *American Elec. Power*, 582 F.3d at 373 n.41 (emphasis added); *see also, e.g., Outboard Marine Corp.*, 680 F.2d at 478 (“*Milwaukee II* and *Sea Clammers*, taken together, establish that the ‘question’ Congress ‘addressed’ in the 1972 Amendments was the entire question of water pollution. The displacement of federal common law must, under the reasoning of *Milwaukee II*, be equally broad.”); *Marquez-Colon v. Reagan*, 668 F.2d 611, 614 n.2 (1st Cir. 1981) (“[T]he federal common law of nuisance for interstate and coastal water pollution has been entirely preempted by the Federal Water Pollution Control Act....”) (citations omitted).

338. The Ninth Circuit’s decision in *National Audubon Society v. Department of Water*, 869 F.2d 1196 (9th Cir. 1988), is particularly instructive. In *National Audubon Society*, the Ninth Circuit interpreted the Supreme Court’s holdings in *Milwaukee II* and *Middlesex* to mandate displacement of federal common law nuisance claims as to all interstate water pollution claims, including claims alleging nonpoint source pollution. *Id.* at 1200. The majority held that “[t]he [Supreme] Court’s statement that federal common law nuisance claims for water pollution are preempted by the [CWA] is unequivocal.” *Id.* In dissent, Judge Reinhardt agreed with the majority that the federal law of nuisance is displaced in the area of nonpoint source water pollution because the Supreme Court’s statements are “unequivocal.” *Id.* at 1212 n.12 (Reinhardt, J. dissenting). *See also Lykins v. Westinghouse Elec. Corp.* 1988 U.S. Dist. LEXIS 3609, at *3-4, *25-26 (E.D. Ky. Feb. 29, 1988) (dismissing federal common law nuisance claim for nonpoint source pollution of surface and groundwaters because “federal common law [has] been preempted by the passage of CERCLA, [CWA] and RCRA”); *Love v. New York State Dept. of Env. Conservation*, 529 F. Supp. 832, 838 (S.D.N.Y. 1981) (barring federal common law

nuisance claim alleging nonpoint source water pollution because “the [CWA] preempted the federal common law of public nuisance in the area of interstate water pollution”), *abrogated on other grounds by Friends of the Earth v. Consolidated Rail Corp.*, 768 F.2d 57 (2d Cir. 1985).

339. The Tenth Circuit has not addressed whether the CWA has displaced federal common law as to nonpoint source interstate water pollution. *See* Tr. at 9308:18-22, 9310:8-13 (ruling on Rule 52(c) mid-trial motions). The Circuit has observed that the CWA does not comprehensively regulate the area of nonpoint source pollution. *See* Tr. at 9307:17-9308:22, 9309:9-9310:13 (summarizing cases). *See Defenders of Wildlife v. EPA*, 415 F.3d 1121 (10th Cir. 2005), and *American Wildlands v. Browner*, 260 F.3d 1192 (10th Cir. 2001). But, that is not the standard that controls here: the question is whether Congress has spoken to the issue of nonpoint sources. *See Milwaukee II*, 451 U.S. at 313, 315 n.8; *see also Oswego Barge Corp.*, 664 F.2d at 335. Clearly, it has.³⁵

340. The factual record illustrates EPA’s regulations of both point and nonpoint sources under the CWA. First, EPA has approved Arkansas’ nonpoint source management plan. Tr. at 9558:6-9560:6 (Smith).

341. Second, EPA has given notice to Arkansas and Oklahoma that it is undertaking a TMDL of the IRW to address point and nonpoint sources of pollution. DJX8090. EPA initiated this process following years of intentional delay by the State of Oklahoma in undertaking this process. Stephen Thompson, the Executive Director of the Oklahoma Department of

³⁵ At the close of the State’s case, Defendants sought judgment under to Fed. R. Civ. P. 52(c) on the State’s federal common law nuisance claim, pressing some of these same arguments. *See* Tr. at 8548:21-8570:4, 8636:6-8637:3, 8817:1-8818:11, 8975:5-8982:22. The Court denied that motion. *See* Tr. at 9304:3-9311:7. The parties have subsequently presented additional legal authority bearing upon these issues and supporting the conclusion that Congress has displaced federal common law in this area.

Environmental Quality, testified that the State of Oklahoma failed to complete a phosphorus TMDL for the IRW because of disagreements between Mr. Thompson and other state officials at the Oklahoma Water Resources Board about the appropriate standards for measuring water quality. Ct. Ex. 13 (Thompson Dep.), at 105:19-22; 107:19-114:15; Tr. at 10785:20-10787:15 (Stephen Thompson). As noted above, EPA's TMDL will establish allocations of pollutants to various sources, which the States will be required to meet through Water Quality Plans and periodic reports to EPA.

342. Separately, the Court takes judicial notice of a letter from EPA to the Virginia Secretary of Natural Resources addressing nonpoint source pollution in the area which drains into the Chesapeake Bay. *See* EPA Region III Letter to Virginia Secretary of Natural Resources Bryant, Dec. 29, 2009, at 3.³⁶ Therein, EPA describes its authority under the CWA to address sediment and nutrient loading, and discusses how allocations of permissible nutrient and sediment loading, including from nonpoint sources, are established by the TMDL process.

343. EPA furthermore details its authority under the CWA to compel States to reduce point and nonpoint loading of nutrients according to the allocations set out in the EPA's TMDL. This includes expanding point-source permit requirements "to currently unregulated sources."

³⁶ This document was submitted to the Court for judicial notice and marked for identification as DJX8158. The Court has not made a final determination, though it has discretion to do so. *See* Tr. at 11600:2-21; Fed. R. Evid. 201(c). This letter generated by the EPA is the kind of document a Court may take judicial notice of because it is "not subject to reasonable dispute in that it is ... capable of accurate and ready determination by resort to sources whose accuracy cannot reasonably be questioned." Fed. R. Evid. 201(b).

For example, EPA may utilize its “‘Residual Designation Authority’ to increase the number of sources, operations and/or communities regulated under the NPDES permit program.” *Id.* at 4.³⁷

344. Thus, although the CWA does not regulate nonpoint sources to the same extent or in the same manner as point sources, EPA has substantial authority under federal law to regulate and remediate nonpoint sources. Congress, therefore, has spoken to the issue, displacing the federal common law of nuisance arising from nonpoint source pollution claims.

VII. STATE COMMON LAW TRESPASS

A. Authorization, Causation, and Agency

345. On the commonly applicable bases for judgment set forth above, the Court concludes that the State has failed to meet its burden to prove that Defendants are liable for trespass under Oklahoma common law.

346. Judgment must be entered in favor of Defendants as to the state law trespass claim because performance of the alleged conduct is legally authorized and consented to by the State of Oklahoma.

³⁷ Oklahoma similarly has the authority to designate animal feeding operations as CAFO, *see* 2 Okla. Stat. § 20-44(A)(3), (C).; Tr. at 2930:19-2932:1 (Gunter), thereby subjecting them to stricter environmental regulation and “intensive scrutiny,” Tr. at 2932:2-16 (Gunter). The Attorney General has opined that “a poultry facility, the dry litter operations of which would not ordinarily make it subject to regulation under the Act, could be treated as a CAFO *based on the Board’s determination that the manure from the facility was causing high levels of algae growth in a nearby stream.*” Attorney General Opinion 97-95. *See* DJX1176 (judicially noticed, Tr. at 2933:8-11). Yet, while alleging in this lawsuit that poultry farms are contributors of significant pollution to the waters of the State, the State has failed to designate a single poultry feeding operation in the IRW a CAFO, Tr. at 2931:14-2932: 21.

347. Judgment must also be entered in favor of Defendants because the State failed to meet its burden as to either general or Defendant-specific causation.

348. Finally, judgment must be entered in favor of Defendants because the record evidence demonstrates that Defendants do not participate in or control the land application of poultry litter, and cannot be held liable for the conduct of their Growers based on common law employment and agency principles or upon the principles set forth in the Restatement (Second) of Torts § 427B.

B. Oklahoma Common Law Cannot Supplant the Laws of Arkansas to Regulate Commercial Conduct Occurring in Arkansas

349. The Court has previously addressed whether the State can apply Oklahoma law to conduct in Arkansas that is specifically authorized by Arkansas law. The Court has held previously that Oklahoma may apply neither its statutory law and nor its common law of nuisance to such conduct. *See, e.g.*, Aug. 18, 2009 Hrg. Tr. at 100:13-101:16, 188:7-11; June 15, 2007 Hrg. Tr. at 16:22-17:14, 44:17-45:7 (Dkt. No. 2057 Ex. 38); Dkt. No. 1187; Dkt. No. 1202; *see also* Dkt. No. 2166 at 13 (conceding that “[i]n light of this Court’s June 15, 2007 ruling, the State is not seeking to apply its claim under 27A Okla. Stat. § 2-6-105 (Count 7) to conduct outside the State of Oklahoma”).

350. The only remaining question is whether the State’s common law trespass claim should be treated any differently as the State has continued to assert. *See* State of Oklahoma’s Response to Defendants’ Motion to Structure the Mode and Order of Presentation of the Case to Separate Jury Issues from Equitable Issues, Dkt. No. 2600 at 2 (Sept. 10, 2009) (seeking “injunctive relief under trespass law for conduct occurring in Oklahoma *and* Arkansas”) (emphasis added). There is no legal basis to differentiate between the State’s statutory, common law nuisance and trespass claims in this respect as each seeks a prospective

injunction under Oklahoma law against poultry litter that is land applied in accordance with Arkansas law. Accordingly, each runs afoul of the same constitutional principles barring any state from exerting its own laws over commerce in any other.

351. The record demonstrates that Arkansas comprehensively regulates the application of poultry litter as a fertilizer and soil amendment within its borders. The State's action here asks this Court to supplant that regulatory scheme with Oklahoma's common law of trespass, displacing the scientific and policy judgments made by the Arkansas legislature and replacing them instead with standards to be established by this Court. Oklahoma's request violates a number of fundamental constitutional principles.

352. The Commerce Clause forbids Oklahoma from regulating economic activity occurring in neighboring States. Although Oklahoma protests that this rule should be set aside because the use of poultry litter by Arkansas farmers allegedly has adverse effects in Oklahoma, the Supreme Court has made clear that the Commerce Clause precludes the application of a State's law "to commerce that takes place wholly outside of the State's borders, whether or not the commerce has effects within the State." *Healy v. Beer Institute*, 491 U.S. 326, 336 (1989) (quoting *Edgar v. MITE Corp.*, 457 U.S. 624, 642-43 (1982)); see also *Alliance of Auto. Mfrs. v. Gwadosky*, 430 F.3d 30 (1st Cir. 2005); *Gerling Global Reinsurance Corp. of Am. v. Low*, 240 F.3d 739, 746 (9th Cir. 2001); *Cotto Waxo Co. v. Williams*, 46 F.3d 790, 793 (8th Cir. 1995).

353. Oklahoma's request moreover violates core structural principles of federalism. Using Oklahoma common law to set aside a regulatory scheme adopted by the Arkansas legislature would be contrary to the principle that each State entered our Nation with its "sovereignty intact." *Blatchford v. Native Vill. of Noatak*, 501 U.S. 775, 779 (1991). Upon entry into our federal system, the Constitution guaranteed that each State would remain a sovereign

entity independent of the authority of other States, although all are subject to the supremacy of federal law. *See id.*; *Hans v. Louisiana*, 134 U.S. 1, 13 (1890); U.S. Const. art. VI, § 6 (Supremacy Clause).

354. The Constitution contains numerous provisions whose purpose is to maintain the distinct and co-equal status of the States. *See, e.g.*, U.S. Const. art IV, § 1 (“Full Faith and Credit shall be given by each State to the public Acts ... of every other State.”), art. IV, § 2, cl. 2 (governing extradition from one state to another). Consistent with these textual provisions, the Supreme Court has emphasized the importance of “the constitutional barriers by which all States are restricted within the orbits of their lawful authority and upon which the preservation of the Government under the Constitution depends.” *New York Life Inc. Co. v. Head*, 234 U.S. 149, 161 (1914).

355. It is a “basic principle of federalism that each State may make its own reasoned judgment about what conduct is permitted or proscribed within its borders, and each State alone can determine what measure of punishment, if any, to impose on a defendant who acts within its jurisdiction.” *State Farm Mut. Auto. Ins. Co. v. Campbell*, 538 U.S. 408, 422 (2002). Because this rule is fundamental to the agreement entered into by the States in creating the Constitution, it has been applied in a variety of legal contexts. *See, e.g., id.* at 421 (no general basis for state to impose punitive damages based upon acts committed outside of the State’s jurisdiction); *BMW Ins. of N. Am., Inc. v. Gore*, 517 U.S. 559, 572 (1995) (“a State may not impose economic sanctions on violators of its laws with the intent of changing the tortfeasors’ lawful conduct in other States.”).

356. To allow Oklahoma to apply its own law through this Court to enjoin conduct in Arkansas that is authorized under Arkansas statute and regulations would impermissibly invade

Arkansas' prerogative to legislate within its own borders. Arkansas has made a deliberate policy choice on how to regulate the use of poultry litter as fertilizer. See, *e.g.*, Ark. Code Ann. §§ 15-20-901, *et seq.*; §§ 15-20-1101, *et seq.* Oklahoma's attempt to impose its own preferences upon Arkansas violates the fundamental principle that a State "cannot extend the effect of its laws beyond its borders so as to destroy or impair the right of citizens of other states." *Hartford Accident & Indem. Co. v. Delta & Pine Land Co.*, 292 U.S. 143, 149 (1934).

357. Awarding the State the injunction it seeks would moreover subject conduct in Arkansas contrary to that injunction to the Court's power of contempt. But, the Supreme Court has held that citizens cannot be punished by the law of another State for conduct that is legal in the State where it occurs. In *BMW of North America, Inc. v. Gore*, the Court held that a punitive damages award based in part on lawful conduct in another state violated the due process rights of the defendant, because "[t]o punish a person because he has done what the law plainly allows him to do is a due process violation of the most basic sort." 517 U.S. at 573 n.19 (quoting *Bordenkircher v. Hayes*, 434 U.S. 357, 363 (1978)); see also *State Farm*, 538 U.S. at 421 ("A State cannot punish a defendant for conduct that may have been lawful where it occurred.").

358. At bottom, state laws imposing extraterritorial legal obligations violate due process. See, *e.g.*, *New York Life*, 234 U.S. at 162 ("[A] State may not consistent with the due process clause of the Fourteenth Amendment extend its authority beyond its legitimate jurisdiction either by way of the wrongful exertion of judicial power or the unwarranted exercise of taxing power."); *Home Ins. Co. v. Dick*, 281 U.S. 397, 407 (1930) ("The Texas statute as here construed [to invalidate insurance contracts that were legal in Mexico where they were executed] deprives the garnishees of property without due process of law."); *Virginia v. Bigelow*, 421 U.S.

809, 824 (1975) (“Virginia possessed no authority to regulate the services provided in New York”).

359. Arguing to the contrary, Oklahoma relies primarily on *Cameron v. Vandegriff*, 13 S.W. 1092, 1093, 1890 Ark. LEXIS 92 (Ark. 1890), to support its argument that this Court can use Oklahoma law to enjoin conduct within Arkansas that is specifically authorized by Arkansas law. But *Cameron* does not support the State’s argument. In fact, *Cameron* addresses only whether a court has *jurisdiction* to hear a lawsuit where the plaintiff was injured within the territory of the court’s jurisdiction, but the defendant’s actions were outside the state. *Id.* at LEXIS *1 (setting out the lower court’s ruling only in the LEXIS on-line edition),³⁸ 13 S.W. 1093 (appellate court’s ruling). In *Cameron* the plaintiff was injured by blasting occurring in Indian Territory (now Oklahoma) that threw rocks into Arkansas. The trial court concluded that it lacked jurisdiction to hear such a claim because the defendant and the conduct in question were out of state, *id.* at LEXIS *1, but the appellate court reversed, noting that “[t]he rock which occasioned the injury was put in motion by the appellants in the Indian Territory; but, by the same force, its motion was continued, and the injury done in this state. The cause of action arose here.” *Id.* at 1093.

360. This assertion of *jurisdiction* over out-of-state defendants is unremarkable. While the formulation used in this 120-year-old case may be outdated, the United States Supreme Court

³⁸ The trial court stated its ruling thus: “If the jury find from the evidence that the blast, from which the plaintiff received the injury complained of, was situated in the Choctaw Nation, Indian Territory, then this court has no jurisdiction to try this case, although the injury was received in this county and State from a flying rock from said blast.” 1890 Ark. LEXIS 92 at *1. Although the parties have discussed *Cameron* previously, the lower court’s opinion making clear that the dispute was about the court’s jurisdiction had never been previously brought to the attention of this Court.

reached similar conclusions in *International Shoe Co. v. Washington*, 326 U.S. 310 (1945), and *World-Wide Volkswagen Corp. v. Woodson*, 444 U.S. 286 (1980), which hold that it does not offend due process for a court to exercise personal jurisdiction over an out-of-state defendant when that defendant's conduct has caused an injury within the state if the defendant has certain minimum contacts with the state. *See World-Wide Volkswagen Corp.*, 444 U.S. at 291-99; *International Shoe*, 326 U.S. 316-19. But the principles of jurisdiction over out-of-state defendants discussed in *Cameron* have nothing to do with this case. Defendants do not assert that this Court lacks jurisdiction over them. Rather, they assert that the Court cannot and should not formulate a rule under the common law of Oklahoma and use that rule to govern poultry litter applications occurring in Arkansas in lieu of the specific regulations that Arkansas has adopted.

361. This Court's prior orders limiting the application of Oklahoma law to conduct occurring in Oklahoma were therefore correct and the State's common law trespass claim must similarly be limited to conduct occurring solely within the borders of Oklahoma.

362. As noted out above, the State has failed to make any substantial Oklahoma-only case. For that reason, the State's trespass claim must fail.

C. Oklahoma lacks a sufficient possessory interest in public waters to maintain a trespass claim

363. The State's trespass claim also fails for the separate reason that the State lacks the requisite possessory interest in the public waters.³⁹

³⁹ Defendants moved for judgment on the State's trespass claim under Rule 52(c) at the close of the State's case but the Court denied the motion. The denial of a Rule 52(c) motion is a preliminary ruling based on an incomplete record. *See* Fed. R. Civ. P. Rule 52(c). The parties subsequently completed the trial and have now submitted additional legal authority on the nature of the State's interest in public waters under Oklahoma law. Those authorities show that the

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364. Trespass is the “actual physical invasion of the real estate of another without the permission of the person lawfully entitled to possession.” *Williamson v. Fowler Toyota, Inc.*, 956 P.2d 858, 862 (Okla. 1998); *see also Moore v. Texaco, Inc.*, 244 F.3d 1229, 1233 (10th Cir. 2001) (quoting *Williamson*); *Angier v. Mathews Exploration Corp.*, 905 P.2d 826, 829-30 (Okla. Ct. App. 1995) (quoting Restatement (Second) of Torts § 158).⁴⁰

365. Trespass redresses “the exclusive possession of ... land which has been invaded.” *Angier*, 905 P.2d at 830. Thus, the critical element in a trespass claim is possession of the invaded property: “As has been universally held by the courts, trespass is an injury to the possession, and one not in possession ... cannot maintain an action” for trespass. *Casey v. Mason*, 59 P. 252, 255 (Sup. Ct. Terr. Okla. 1899); *Williamson*, 956 P.2d at 862; W. Page Keeton, et al., *Prosser and Keeton on the Law of Torts* § 13 at 70 (5th ed. 1984) (“The historical requirement that an invasion must constitute an interference with possession in order to be actionable as a trespass has persisted.”); 3 William Blackstone, *Commentaries* *210 (“One must have a property (either absolute or temporary) in the soil, and actual possession by entry, to be able to maintain an action of trespass”).

366. The fact of the plaintiff’s legal possession is so central to the law of trespass that even a plaintiff who mistakenly has possession of property may maintain a trespass action

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relevant features of Oklahoma law defining Oklahoma’s interest in public waters are the same as those set out in *New Mexico v. General Electric, Inc.*, 335 F. Supp. 2d 1185 (D.N.M. 2004), *aff’d in relevant part*, 467 F.3d 1223, 1247 n.36 (2006).

⁴⁰ Oklahoma’s legal standard for trespass is also identical to the New Mexico trespass standard at issue in *New Mexico v. General Electric Co.*, 335 F. Supp. 2d 1185 (D.N.M. 2004), *aff’d in relevant part*, 467 F.3d 1223, 1247 n.36 (2006). In *New Mexico*, both the district court and the Tenth Circuit relied on *Schwartzman, Inc. v. Atchison, Topeka & Santa Fe Ry.*, 857 F. Supp. 838, 844 (D.N.M. 1994), which states that “[t]respass is defined as a direct infringement of another’s right of possession.”

against anyone (except the lawful owner) who disturbs that possession. *Lambert v. Rainbolt*, 250 P.2d 459, 461 (Okla. 1952) (“plaintiff’s proof of occupancy and possession appears to be sufficient”); *Harrington v. Chavez*, 196 P. 320, 321 (N.M. 1921); see Keeton et al., *supra* § 13, at 77 (“Therefore any person in the actual and exclusive possession of the property may maintain the action, although the person has no legal title, and is in the wrongful occupation, as for example under a void lease, or the mere adverse possession.”).

367. As these authorities demonstrate, Oklahoma follows the general common law rule that one “requirement[] of recovery for trespass to land under the common law action of trespass [is] an invasion (a) which interferes with the right of exclusive possession of the land.” W. Page Keeton, et al., *Prosser and Keeton on the Law of Torts* § 13 at 67 (5th ed. 1984); *id.* (“In the bundle of rights, privileges, powers, and immunities that are enjoyed by an owner of property, perhaps the most important is the right to exclusive ‘use’ of the realty.”); *id.* at 77; Restatement (Second) of Torts § 821D cmt. D (“A trespass is an invasion of the interest in the exclusive possession of land, as by entry upon it.” (citing *id.* §§ 157-66)); *Browning v. MCI, Inc. (In re WorldCom, Inc.)*, 546 F.3d 211, 218 (2d Cir. 2008) (“Trespass law protects a person’s exclusive possessory interest in property.”); *Morgan v. Barry*, 12 Fed. App’x 1, 4 (D.C. Cir. 2000) (“the tort of trespass ... is the intentional intrusion of a person or thing upon property that invades and disrupts the owner’s exclusive possession of that property”); *Patton v. TPI Petroleum, Inc.*, 356 F. Supp. 2d 921, 930 (E.D. Ark. 2005) (“The law of trespass protects rights and interests in land ... includ[ing] the right to exclusive possession and the right of physical integrity of the land.”); *New Mexico*, 335 F. Supp. 2d at 1234.

368. Oklahoma does not have a sufficient possessory interest in the public waters of the IRW for two reasons. *First*, the State asserts only sovereign authority to control and regulate

the waters but does not have the “possession” necessary to maintain a trespass claim against Defendants. Second, the State’s trespass claim must be dismissed because (unlike the other claims in this case), actual ownership and possession of the waters is an element of the tort of trespass.⁴¹

1. The State does not have ownership or possession of the waters of the IRW

369. The State’s trespass claim is not based on the type of rights that a private party may hold in water.⁴² The State does not assert that it has a possessory interest in the waters of the IRW as a landowner or an owner or holder of specific water rights. *See* Dkt. No. 1917 at 17 (“The State’s Trespass Claim Does Not Arise From Private Rights” and is not a claim based on the State’s “possessory interest in ‘government property’—public water—in a manner identical to a private litigant”). Just like the plaintiff in *New Mexico*, the State is “not here as [an] appropriator[] or user[] of water.” 335 F. Supp. 2d 1185, 1202 (D.N.M. 2004). Rather, the State claims a sovereign property interest in the water. SAC ¶¶ 5, 119; Dkt. No. 1917 at 17-18; Dkt. No. 1822 at 2 (“The State asserts its claims pursuant to its sovereign, quasi-sovereign/parens patriae, trustee and/or property interests.”); *Tyson Foods*, 258 F.R.D. at 477 n.4.

⁴¹ As the Court has previously held, the State’s alleged possessory interest in the waters of the IRW cannot be litigated without the Cherokee Nation.

⁴² In their Rule 52(c) motions, Defendants argued that the State’s trespass claim failed because the State had not demonstrated its “exclusive” possession of the waters of the IRW. Tr. 8374:4-8392:2. The Court denied that motion, holding that under Oklahoma law, a plaintiff’s possession of property need not be exclusive, merely superior to that of the defendant. Tr. 8405:9-8410:4 (citing *Lambert v. Rainbolt*, 250 P.2d 459 (Okla. 1952) and *Cooperative Refinery v. Young*, 393 P.2d 537 (1964)). Neither Defendants nor the Court addressed whether the State has actual possession of the waters of the IRW as opposed to simply a right to “appropriat[e]” such water “for the benefit and welfare of the people of the state.” 60 Okla. Stat. § 60.

370. As discussed below, it is disputed whether Oklahoma possesses the sovereign interest in the waters of the IRW that it alleges. That dispute is an independent bar to the State's trespass claim. However, the Court can lay aside the question whether the Cherokee Nation is the sovereign of the IRW's waters for a moment because, even if the State has the sovereign interests it asserts, this type of interest is insufficient to support a trespass claim.

371. As the alleged sovereign of the IRW's waters, the State brings its trespass claim as a "public-interest action" based on its interests in protecting "public water" in Oklahoma. Dkt. No. 1917 at 17-18. Indeed, the State derives its alleged interest in the definite streams within Oklahoma from 60 Okla. Stat. § 60, which broadly deals with rights in water in Oklahoma. *See* Dkt. No. 1917 at 18; Dkt. No. 2131 at 12. That provision declares that the water in definite streams is "public water and is subject to appropriation for the benefit and welfare of the people of the state." 60 Okla. Stat. § 60. On its face, this statute does not give "ownership" or "possession" of definite streams to the State. Rather, this language recognizes Oklahoma's sovereign authority to control the use of public water for the welfare of the people. Such authority falls far short of the ownership or possessory interest necessary for the State to succeed on its trespass claim.

372. States do not "own" natural resources such as water, oil, gas, and wild animals—before they have been appropriated and reduced to actual possession. *Douglas v. Seacoast Prods., Inc.*, 431 U.S. 265, 284 (1977); *Ohio Oil Co. v. Indiana*, 177 U.S. 190, 208-09 (1900); *see also Ohio Oil Co.*, 177 U.S. at 207 (explaining that oil or gas "[l]ike water ... is not the subject of property except while in actual occupancy"); *Mountain States Legal Found. v. Hodel*, 799 F.2d 1423, 1426 (10th Cir. 1986). "A State does not stand in the same position as the owner of a private game preserve and it is pure fantasy talk of 'owning' wild fish, birds, or animals.

Neither the States nor the Federal Government, any more than a hopeful fisherman or hunter, has title to these creatures until they are reduced to possession.” *Douglas*, 431 U.S. at 284.

373. Rather, as the Supreme Court of Idaho summarized, state control of public waters is an interest that “is not ‘in the proprietary sense, but rather in the sovereign capacity as representative of all the people for the purpose of guaranteeing that the common rights of all shall be equally protected and that no one shall be denied his proper use and benefit of this common necessity.’” *Poole v. Olaveson*, 356 P.2d 61, 65 (Idaho 1960) (quoting *Walbridge v. Robinson*, 125 P. 812, 814 (Idaho 1912)).

374. Oklahoma law agrees on this point. The Oklahoma Supreme Court has described the State’s right over public waters as “control,” not the type of propriety possession that trespass law protects. *Oklahoma Water Resources Bd. v. Central Okla. Master Conservancy Dist.*, 464 P.2d 748, 753 (Okla. 1969) (“The state is without authority to transfer one man’s property to another, but its power *to control* unappropriated public waters is plenary.”).⁴³

375. This follows from Oklahoma’s water-ownership statute. Oklahoma defines ownership as the “right of one or more persons to possess and use [something] to the exclusion of others.” 60 Okla. Stat. § 1. Yet Oklahoma law nowhere provides that the State has this type of proprietary possession of the waters in definite streams. Rather, it provides a system whereby the “owner of the land owns the water standing thereon,” unless in a definite stream; but, water in a definite stream “becomes public water and is subject to appropriation for the benefit and

⁴³ In *City of Stillwater v. Oklahoma Water Resources*, the Oklahoma Court of Appeals spoke of state “ownership” of public waters. 524 P.2d 938, 944 (Okla. Ct. App. 1974). But, the court’s loose language was merely the “legal shorthand” to discuss water distribution law, as Oklahoma had “power to preserve and regulate the exploitation of an important resource.” *Toomer*, 334 U.S. at 402. The court merely held that until Oklahoma specifically appropriated water, it retained authority to control it. *City of Stillwater*, 524 P.2d at 944.

welfare of the people of the state.” 60 Okla. Stat. § 60. Thus, all of the people of the State have an interest in public waters before they are appropriated.

376. Because States do not possess public waters in the “proprietary sense,” but rather in trust for the benefit of the people, they lack the necessary possessory interest to maintain a trespass action for injury to public waters held for the general public. *New Mexico v. Gen. Elec.*, 335 F. Supp. 2d at 1202, 1234-35; *see also Comm’r of Dep’t of Planning & Nat’l Res. v. Century Alumina Co.*, 2008 WL 4809897, *10 (D.V.I. Oct. 31, 2008) (“Nor does guardianship of the public trust give the Government of the Virgin Islands sufficient possessory interest in any water or land to maintain a trespass action.”); *State ex rel. Stuart v. Dickinson Cheese Co.*, 200 N.W. 59, 61 (N.D. 1972); *Pennsylvania v. Agway, Inc.*, 232 A.2d 69, 71 (Pa. Super. Ct. 1967) (state had insufficient property interest to maintain trespass claim for injury to natural resources from water contamination).

377. The court’s decision in *New Mexico v. General Electric*, 335 F. Supp. at 1231-35, is directly on point. There, New Mexico sued GE for *inter alia* trespass for allegedly polluting nearby groundwater. 335 F. Supp. 2d at 1205, 1222. New Mexico did not assert a “possessory interest as a landowner,” nor a “possessory interest as a water rights holder.” *Id.* at 1234. Rather, as here, the State asserted its “broader sovereign and public trust/*parens patriae* interests in protecting the public’s right to the use of all of the waters of New Mexico.” *Id.* at 1234-35. The court dismissed the state’s claim because such interests are not the proprietary possessory interests necessary to maintain a trespass claim. *Id.* at 1235.

378. No meaningful distinction can be made between Oklahoma and New Mexico trespass law for purposes of this analysis. Both require the invasion of a proprietary possessory interest. *Compare, e.g., Williamson*, 956 P.2d at 862, with *Schwartzman*, 857 F. Supp. 2d at 844.

379. Nor does *Lambert v. Rainbolt*, 250 P.2d at 459, offer a point of departure.

Lambert held merely that a plaintiff exercising actual possession may maintain a trespass claim even if the possession is mistaken.

380. New Mexico trespass law is the same. See *Harrington v. Chavez*, 196 P. 320, 321 (N.M. 1921). A mere “superior” interest is insufficient. A plaintiff must have a proprietary possessory interest, not an interest in holding water that is owned by all citizens. The State argues Oklahoma law nevertheless permits trespass claims where a plaintiff shares proprietary possession with others. The State provides the example of trespass lawsuits brought by some, but not all, tenants in common. See, e.g., *Coop. Refinery Ass’n v. Young*, 393 P.2d 537 (Okla. 1964). But this example is not to the contrary.

381. Under Oklahoma law, tenants in common may maintain a trespass action because each has an *equal possessory right in the property*. See, e.g., *De Mik v. Cargill*, 485 P.2d 229, 233 (Okla. 1971) (“The relationship exists where property is held by several distinct titles by unity of possession, and is not an estate but a relation between persons, the only essential being a possessory right, as to which all are entitled to equal use and possession.”); accord *Delk v. Markel Am. Ins.*, 81 P.3d 629, 638 (Okla. 2003); *Matthews v. Matthews*, 961 P.2d 831, 834 (Okla. 1998); *Am. Bank & Trust Co. v. Continental Inv. Corp.*, 213 P.2d 861, 863 (Okla. 1949). In contrast, as explained above, the State does not have a proprietary possessory interest in public waters.

382. As with the principles discussed above, Oklahoma and New Mexico law are on all fours as to the rights of joint tenants to pursue trespass claims due to their joint possession. See *Pacheco v. Martinez*, 636 P.2d 308, 312 (Ct. App. N.M. 1981) (“The gist of an action of trespass to real property is in tort for the alleged injury to the right of possession. To maintain such

action, the plaintiff must have been in actual or constructive possession of the land at the time of the alleged trespass.”); *Northcutt v. McPherson*, 473 P.2d 357, 359 (N.M. 1970) (“Tenants in common are *each* entitled to the reasonable use, occupancy, benefit and *possession* of the common property.” (emphases added)); *cf. De Bergere v. Chaves*, 93 P. 762, (N.M. Terr. 1908) (“We think the true rule to be that a tenant in common may sue separately in ejectment, and that, if the defendant shows no title, he is entitled to recover possession of the entire estate That a tenant in common may sue without joining the other tenants in common is also held as late as 1898, when the Supreme Court of the United States quotes approvingly from *Davis v. Coblens*, 12 D.C. App. 51, 61”). Oklahoma and New Mexico simply follow the general rule that “[a]ny person may maintain an action for trespass to realty who has sufficient possession of the land,” including joint tenants. 87 C.J.S. *Trespass* § 30 (2009) (discussing persons entitled to sue and cotenants). Accordingly, the reasoning of the *New Mexico* decisions are directly applicable here.

383. As in *New Mexico*, the State here does not claim a specific possessory interest as a landowner or water rights holder. It claims only to have a sovereign public trust / *parens patriae* interest in protecting the public’s right to waters in Oklahoma. Such an interest is not ownership or a similar type of proprietary possession and is, therefore, insufficient to prevail on the State’s trespass claim. *New Mexico v. GE*, 335 F. Supp. 2d at 1222; *Toomer*, 334 U.S. at 402. Because the State lacks the necessary possessory interest in the waters of the Oklahoma IRW, its trespass claim cannot be sustained.

2. Litigation of the State’s trespass claim requires the participation of an indispensable party

384. The State’s trespass claim should also be dismissed because its resolution requires an adjudication of the Cherokee Nation’s ownership rights to the waters of the IRW.

385. As explained, the State's trespass claim requires the State to prove a proprietary possessory interest in the waters at issue. In an attempt to sustain that burden, Oklahoma asserts that it is the sovereign trustee of the IRW's natural resources.

386. However, as this Court has acknowledged, the Cherokee Nation has substantial claims that it is the sovereign trustee of the IRW's natural resources. *Oklahoma v. Tyson Foods, Inc.*, 258 F.R.D. 472, 477-79 (N.D. Okla. 2009). Thus, adjudicating the State's trespass claim—and the essential element of whether the State has a possessory interest in the waters of the IRW—will require a resolution of Oklahoma's interests *vis-à-vis* the Cherokee Nation.

387. Indeed, the Court has held that “the State has standing to assert its claims relative to its own rights in the IRW,” but has “no standing” to redress “injury to the lands and natural resources in the IRW that fall within the Cherokee Nation's sovereign interests.” *Oklahoma v. Tyson Foods, Inc.*, 258 F.R.D. 472, 483 (N.D. Okla. 2009); *id.* (“A plaintiff does not have standing to assert a claim of injury to property it does not own”). Because the tort of trespass requires as one of its elements a specific showing that the plaintiff has a proprietary, possessory interest in the allegedly invaded resource, the State's trespass claim must be dismissed.

VIII. Injunctive Relief

388. The State petitions the Court for injunctive relief.

389. As an initial matter this request is overbroad as it seeks an injunction against parties that no longer operate in the IRW. The record is clear that Defendants Cargill, Inc., Cal-Maine Foods, Inc., and Peterson Farms, Inc. have no continuing operations in the IRW. Tr. at 4849:13-15 (Alsup: Cargill, Inc.), 4412:4-10 (Storm: Cal-Maine Foods, Inc.), 4786:1–4787:3 (Houchens) & Ok. Ex. 827 at 2 (Peterson Farms, Inc.). Therefore, to the extent that the State seeks forward-looking injunctive relief, these parties must be excluded. *See Buchwald v. Univ.*

of *N.M. Sch. of Med.*, 159 F.3d 487, 493 (10th Cir. 1998) (prospective relief not supported by proof of past injury alone). Indeed, given the absence of any evidence of either current or likely future poultry operations in the IRW by any of these three companies, the State lacks Article III standing to assert claims for prospective injunctive relief against them. See *Bronson v. Swensen*, 500 F.3d 1099, 1112 (10th Cir. 2007) (holding that “[t]he redressability prong [of the standing test] is not met when a plaintiff seeks relief against a defendant with no power” to correct the challenged activity); *Phelps v. Hamilton*, 122 F.3d 1309, 1316 (10th Cir. 1997) (“[T]he Supreme Court [has] made clear that plaintiffs may lack standing to seek prospective relief when the challenged conduct is no longer continuing.”).

390. In order to secure a permanent injunction, a party must prove: (1) actual success on the merits; (2) that irreparable harm will follow unless the injunction is issued; (3) that the threatened injury outweighs the harm that the injunction may cause the opposing party; and (4) that the injunction, if issued, will not adversely affect the public interest. See *Southwest Stainless, LP v. Sappington*, 582 F.3d 1176, 1191 (10th Cir. 2009); *Prairie Band Potawatomi Nation v. Wagon*, 476 F.3d 818, 822 (10th Cir. 2007).

A. Success on the Merits

391. Even if a plaintiff prevails on the merits, a court must consider all the factors required to establish injunctive relief. Because injunctive relief is an extraordinary remedy, *Sharp v. 251st Street Landfill, Inc.*, 925 P.2d 546, 549 (Okla. 1996), entitlement to injunctive relief must be “established in the trial court by clear and convincing evidence.” *Id.*; *Winter v. Natural Res. Def. Council, Inc.*, 129 S. Ct. 365, 376 (2008) (characterizing “injunctive relief as an extraordinary remedy that may only be awarded upon a clear showing that the plaintiff is entitled to such relief”). As a result, injunctive relief does not mechanically follow from success on the merits. See *Winter*, 129 S. Ct. at 381 (“it would be an abuse of discretion to enter a

permanent injunction, after final decision on the merits, along the same lines as the preliminary injunction. An injunction is a matter of equitable discretion; it does not follow from success on the merits as a matter of course”); *Weinberger v. Romero-Barcelo*, 456 U.S. 305, 313 (1982) (“a federal judge sitting as chancellor is not mechanically obligated to grant an injunction for every violation of law”).

392. In evaluating those factors, the Court has broad discretion in determining what, if any, equitable relief is warranted. *See Amoco Prod. Co. v. Village of Gambell*, 480 U.S. 531, 542 (1987) (courts possess full traditional equitable authority, including discretion, unless Congress “in so many words, or by a necessary and inescapable inference, restricts the court’s jurisdiction in equity”); *Southwest Stainless*, 582 F.3d at 1191 (“The district court’s discretion in this context is necessarily broad and a strong showing of abuse must be made to reverse it”) (quoting *FTC v. Accusearch Inc.*, 570 F.3d 1187, 1201 (10th Cir. 2009)).

B. Irreparable Injury

393. Because it is an extraordinary remedy, “[a]n injunction should issue only where the intervention of a court of equity ‘is essential in order effectually to protect property rights against injuries otherwise irremediable.’” *Romero-Barcelo*, 456 U.S. at 312 (quoting *Cavanaugh v. Looney*, 248 U.S. 453, 456 (1919)). As a result, an injunction is not appropriate when the relief being sought is available to the plaintiff without equitable intervention. *See id.*, at 314 (finding no abuse of discretion in denying comprehensive injunction when “[a]n injunction [was] not the only means of ensuring compliance”); *Humble Oil & Refining Co. v. Harang*, 262 F. Supp. 39, 42 (D. La. 1966) (“an injunction [should not] be issued where an adequate remedy or relief is available by some other means”).

394. A delay in seeking relief also counsels against a finding of irreparable injury. *Kansas Health Care Ass’n v. Kansas Dep’t of Social & Rehab. Servs.*, 31 F.3d 1536, 1543-44

(10th Cir. 1994); *Systemic Formulas, Inc. v. Kim*, No. 07-CV-159, 2009 WL 4981631 (D. Utah Dec. 14, 2009); *New Jersey Ass'n of Health Care Facilities, Inc. v. Gibbs*, 838 F. Supp. 881, 928 (D.N.J. 1993).

C. Remedies Available at Law and Delay in Acting

395. Under Oklahoma's CAFO Act, the State Board of Agriculture is authorized to designate any poultry feeding operation as a CAFO if "it is determined to be a significant contributor of pollution to the waters of the state ." 2 Okla. Stat. § 20-44(A)(3), (C). The State has recognized its authority under the CAFO Act. *See* Attorney General Opinion 97-95. The State has not designated a single poultry feeding operation in the IRW as a CAFO. Tr. at 2932:17-21 (Gunter).

396. The State of Oklahoma has an independent regulatory scheme that governs the land application of poultry litter. *See supra* ¶¶ 39-125. The State of Oklahoma has decided to regulate, rather than prohibit, the application of poultry litter. Moreover, the State already possesses statutory authority to further restrict, or prohibit, the application of poultry litter in the Oklahoma portion of the IRW. *See* 2 Ok. Stat. §10-9.19(3); Tr. at 486:21-487:23, 532:7-10 (Tolbert); Tr. at 3565:16-3566:3 (Strong).

397. The State of Oklahoma continues to issue Animal Waste Management Plans authorizing the application of poultry litter in the Illinois River Watershed. Tr. at 3579:5-9 (Strong).

398. Oklahoma officials, including the Attorney General and the current and former Secretary of the Environment, have not petitioned for, or requested, more stringent statutory or regulatory restrictions on the land application of poultry litter. Tr. at 488:12-17 (Tolbert); Tr. at 3565:16-3566:6 (Strong); *see also* Tr. at 476:20-477:2 (Tolbert). Instead, the current regulatory scheme is enforced. *See* Tr. at 3865:8-23, 3870:2-3872:15 (Pigeon); 4508:6-25 (Reed); 4591:22-

24 (Saunders); DJX1848-0047, DJX1848-0043, DJX1700, DJX3405, DJX1848-0037, DJX1848-0146, DJX3533-0010; Ok. Ex. 2875D.

399. As discussed above, the State failed to present evidence showing that the land application of poultry litter in Arkansas is the source of any measurable injury in Oklahoma.

400. Arkansas too has a comprehensive regulatory scheme that governs the land application of poultry litter. *See supra* ¶¶ 103-122. The State introduced no evidence as to the effectiveness of this program or regarding its enforcement.

401. Although the State contends that it has no influence over Arkansas actions or regulations, officials from the State of Oklahoma have been invited to provide comments and input into the Arkansas statutes and regulations. For example, Oklahoma officials received drafts of Arkansas's proposed legislation before the laws were enacted and were invited to provide comments or suggestions regarding Arkansas's proposed statutes and regulations. Tr. at 491:18-492:21 (Tolbert); Tr. at 3623:4-13 (Strong); Tr. at 9516:2-14 (E. Smith).

402. Despite the opportunity to comment, officials from the State of Oklahoma did not express dissatisfaction or voice any disagreement with the State of Arkansas's regulatory standards or approach. Tr. at 492:22-493:12 (Tolbert); Tr. at 3624:9-3625:3 (Strong); Tr. at 9517:1-5 (E. Smith). Similarly, Oklahoma had the opportunity to comment on or object to the publicly noticed changes to Arkansas's regulations that became effective on January 1, 2010.

403. The States of Oklahoma and Arkansas have collaborated on matters regarding the IRW in other ways. The Arkansas-Oklahoma Arkansas River Compact Commission ("Compact Commission") is a group formed by a federally-approved compact between the two states. *See* Arkansas River Basin Compact, Pub. L. No. 93-152, 87 Stat. 569 (1973). This two-state group that addresses water quality goals and standards in the IRW, among other things. Tr. at 9465:3-

10 (E. Smith). The Compact Commission includes officials from both Oklahoma and Arkansas. Tr. at 9468:1-5 (E. Smith).

404. In 1997, at Oklahoma's request, the Compact Commission adopted a nutrient reduction goal for the IRW, using the Clean Lakes Study conducted on Lake Tenkiller as the basis for the goal. Tr. at 9466:22-9467:25 (E. Smith).

405. In 2003, the States arrived at a Statement of Joint Principles and Actions to address water quality issues in the IRW. *See* "Statement of Joint Principles and Action" (Ok. Ex. 5928). That included commitments to reduce the loading of phosphorus from both jurisdictions.

406. The State of Arkansas believes it has met its obligations under the Statement of Joint Principles and Actions and Oklahoma has presented no evidence in this case to contradict this claim. Tr. at 9520:23-9521:21 (E. Smith).

407. In addition to the state laws governing litter application, the Compact Commission and the aforementioned interstate cooperative efforts, the TMDL process provides another means to address the issue of nutrient loading that would be the subject of this Court's injunction. A TMDL study identifies all of the sources impacting water quality and identifies the extent to which each source should be reduced in order to meet water quality goals. Conducting a TMDL is the first step in the restoration of a water body. Tr. at 524:9-16 (Tolbert); Ct. Ex. 13 (Stephen Thompson Dep.), at 102:14-21.

408. The State of Oklahoma admits that a TMDL study is the best tool available to help understand and manage multiple sources of nutrients in order to achieve water quality objectives in a watershed. *See* Ct. Ex. 13 (Stephen Thompson Dep.), at 120:12-19; *see also* Tr. at 527:15-19 (Tolbert); 1395:15-25 (Phillips).

409. A TMDL produces load allocations targeted at addressing the non-point sources of pollution it identifies. The EPA considers implementing mechanisms to achieve non-point source load allocations set as a result of a TMDL an “expected deliverable[]” and “trigger[] for federal action.” *See* EPA Region III Letter to Virginia Secretary of Natural Resources Bryant, Dec. 29, 2009, at 3.⁴⁴ A failure to meet an expected deliverable “would subject a State and/or the District to potential EPA actions.” *Id.*

410. The EPA has encouraged the State of Oklahoma since at least 1992 to conduct a TMDL study for the IRW. *See* Ct. Ex. 13 (Stephen Thompson Dep.), at 78:6-10.

411. In 1993, Oklahoma declared that performing a TMDL study was a priority for the future protection and preservation of the IRW. *See* Ct. Ex. 13 (Stephen Thompson Dep.), at 86:16-87:24. The Secretary of the Environment’s 2003 Report to the Senate announced that this TMDL was underway. Tr. at 5245:1-7 (Tolbert); Ok. Ex. 5107. In fact, Ms. Phillips reports that a draft TMDL was underway as early as 1999. Tr. 1398:4-10.

412. The State of Oklahoma did not follow through with its TMDL study for phosphorus loadings in the IRW. Tr. at 525:10-12 (Tolbert); Tr. at 1397:23-1398:14 (Phillips); Tr. at 9543:10-12 (E. Smith). Instead, Stephen Thompson, the head of the Oklahoma Department of Environmental Quality (“ODEQ”), refused to permit the TMDL process to go forward because of his belief that the process would be “biased” against point sources that discharge phosphorus into the waters of the IRW. *See* Ct. Ex. 13 (Stephen Thompson Dep.), at 111:1-19, 110:1-4.

⁴⁴ This document was submitted to the Court for judicial notice and marked for identification as DJX8158.

413. Mr. Thompson has halted the phosphorus TMDL process that was underway in 2004 until ODEQ can convince the Oklahoma Water Resources Board to change the procedures and protocols for determining compliance with Oklahoma's phosphorus standard in the IRW. *Id.*

414. In particular, Mr. Thompson was concerned that the methodology for calculating compliance with the phosphorus standard was based upon calculation of a geometric mean. According to Mr. Thompson, preliminary analysis and modeling done for ODEQ indicated that the existing Oklahoma standard could not be met without further point source reductions, which Mr. Thompson considered to be "unfair." *See* Ct. Ex. 13 (Stephen Thompson Dep.), at 101:25-103:1, 108:15-19, Tr. at 10769:21-10770:5, 10830:3-21.

415. The EPA recently informed the States of Oklahoma and Arkansas that it will take over the process of developing a phosphorus TMDL for both sides of the IRW. *See* DJX8090; Tr. at 3614:11-3615:2 (Strong); Tr. at 9543:16-22 (E. Smith).

416. The State of Oklahoma and the State of Arkansas have been in contact with the EPA to provide technical support and data for the TMDL study. Tr. at 3615:11-13, 3620:25-3621:18 (Strong); Tr. at 9544:1-11 (E. Smith). On January 19, 2010, the EPA issued a "Call for Data" in the Federal Register seeking water quality, land use, and phosphorus source data relevant to developing a TMDL for the IRW. *See* 75 Fed. Reg. 2860 (Jan. 19, 2010).⁴⁵ This notice makes clear that the EPA TMDL will address both point and potential nonpoint sources of phosphorus including agricultural activities. *See id.* at 2861 (asking for "Other nutrient source

⁴⁵ This document was submitted to the Court for judicial notice and marked for identification as DJX8159. The Court has not made a final determination, though it has discretion to do so. *See* Tr. at 11600:2-21; Fed. R. Evid. 201(c). The Federal Register is the kind of document a Court may take judicial notice of because it is "not subject to reasonable dispute in that it is ... capable of accurate and ready determination by resort to sources whose accuracy cannot reasonably be questioned." Fed. R. Evid. 201(b).

information and/or water quality assessments specifically addressing wastewater discharges, agricultural water diversions and/or agricultural return flows, water supply intake structures, and information regarding the distribution, population and location of feedlots, pastures, cattle and poultry houses”).

417. The EPA expects to complete the TMDL is within the next 12 to 18 months. *See* DJX8090; Tr. at 9552:2-6 (E. Smith); DJX8126.

418. The Court finds that the State of Oklahoma has sufficient regulatory tools and resources at its disposal to address the issue of alleged phosphorus runoff from land application of poultry litter to preclude the need for judicial intervention. The fact that Oklahoma currently has statutory authority to limit, or prohibit, the application of poultry litter on any particular field (or all fields) in the Oklahoma portion of the IRW and has made a choice not to exercise that authority militates heavily against the entry of an injunction. Similarly, the fact that Arkansas has responded in good faith to Oklahoma’s requests for collaboration on meeting water quality goals counsels against a court order that would supplant Arkansas’ policy choices in this area.

D. Balance of Hardships

419. On appeal from the denial of the preliminary injunction in this case, the State argued that a sovereign seeking to protect the public health did not need to meet all four traditional standards for injunctive relief. The Tenth Circuit rejected that approach and reiterated the established standard, declaring that “[t]o obtain a preliminary injunction, the moving party must demonstrate: (1) a likelihood of success on the merits; (2) a likelihood that the movant will suffer irreparable harm in the absence of preliminary relief; (3) that the balance of equities tips in the movant's favor; and (4) that the injunction is in the public interest.” *Tyson Foods*, 565 F.3d at 776 (internal quotations omitted).

420. Even where liability is established, the Court must weigh all relevant factors and not “exercise [its] equitable powers loosely or casually whenever a claim of ‘environmental damage’ is asserted.” *Aberdeen & Rockfish R. Co. v. Students Challenging Regulatory Agency Procedures (SCRAP)*, 409 U.S. 1207, 1217 (1972) (C.J. Burger, as Circuit Justice); *Lands Council v. McNair*, 537 F.3d 981, 1005 (9th Cir. 2008) (en banc) (holding that the law “does not [] allow us to abandon a balance of harms analysis just because a potential environmental injury is at issue”), *cert. granted*, 78 U.S.L.W. 3254 (U.S. Jan. 15, 2010) (No. 09-475); *Geertson Seed Farms v. Johanns*, 570 F.3d 1130, 1136 (9th Cir. 2009) (the “traditional balancing of harms applies in the environmental context”); *see also Winter*, 129 S. Ct. at 381 (“the balance of equities and consideration of the public interest [] are pertinent in assessing the propriety of any injunctive relief, preliminary or permanent”).`

421. There is no record evidence that the application of poultry litter significantly contributes to the impacts or injuries alleged by the State. No expert for the State has testified as to the quantity of phosphorus that allegedly reaches recreational or drinking waters in the Oklahoma portion of the IRW that originates from poultry litter nor has any expert for the State testified water quality standards would be met or Lake Tenkiller would cease to be eutrophic if poultry litter applications were banned or reduced. Nevertheless, the Court has considered each of the alleged injuries identified by the State, including alleged injuries to human health, in balancing the hardships that would be associated with the issuance of an injunction.

1. Health Impacts: Recreational Body Contact with Cyanotoxins

422. In the 2007 BUMP Report and other reports prepared pursuant to section 303(d) of the Clean Water Act, the State of Oklahoma has listed all four of its Scenic River segments – Barren Fork, Flint Creek, and two segments of the Illinois River – as “impaired” for Primary

Body Contact Recreation (“PBCR”). *See* Ok. Ex. 5594 at X, XI; Ok. Ex. 3284 at C-9; Ok. Ex. 6008 at C-15 to C-16.

423. Those same reports assign causes for the impairment. The State does not list cyanobacteria, cyanotoxins, or blue-green algae as possible impairment causes in any of these reports. *See* Ok. Ex. 5594 at XIII, Ok. Ex. 3284 at C-2; Ok. Ex. 6008. The State has therefore never declared cyanobacteria, cyanotoxins, or blue-green algae to be the cause for any of these reported PBCR impairments in the IRW.

424. The State of Oklahoma has never shut down the concessionaires operating canoeing and rafting operations in the IRW because of health concerns. Tr. at 628:11-629:5 (Hilsher).

425. The State has identified no individual sickened on account of water body contact in the Illinois River. Tr. at 829:20-24 (Fite).

426. No state or federal agency, including the Oklahoma Department of Health and the United States Centers for Disease Control, has ever reported outbreaks of cyanobacteria in either drinking or recreational water in the IRW. Tr. at 11152:24-11153:2, 11153:16-20 (Gibb).

427. Over the five years of this litigation, the State has only been able to produce two samples that were positive for cyanotoxins. Tr. at 11149:1-13 (Gibb); Tr. at 11068:9-16 (McGuire). The test results from those samples showed “low concentrations” of cyanotoxins in Lake Tenkiller. Tr. at 11068:17-23 (McGuire); Tr. at 11153:7-13 (Gibb). This evidence strongly suggests that there is not a problem with cyanobacteria levels in the waters of the IRW.

428. Cyanobacteria, to the extent they exist in the waters of the IRW, present no substantial risk to human health. Tr. at 11153:21-11153:25 (Gibb).

2. Health Impacts: Drinking Water

429. Disinfection byproducts (DBPs) are substances that result from treating water with disinfectants to make it suitable for human use and consumption. Tr. at 11013:17-25 (McGuire). The EPA has regulated two classes of DBPs. Tr. at 10995:21-10996:2 (McGuire). The EPA set requirements called Maximum Contaminant Levels (“MCLs”) for trihalomethanes (THMs) at 80 parts per billion (“ppb”) and for haloacetic acids (HAA5s) at 60 ppb. Tr. at 11016:4-8 (McGuire).

430. Utilities take periodic water samples. Compliance with the MCLs is measured by taking the four most recent quarterly values for those samples and averaging them to yield a running annual average. The running annual average is then compared to the MCLs for the particular DBPs. Tr. at 11019:2-11 (McGuire). The EPA uses a running annual average because neither THMs nor HAA5s are acute toxins; they are chronic toxic compounds. As a result, the regulation is based on chronic toxicity. Tr. at 11019:12-24 (McGuire).

431. Violations of regulatory MCLs for DBPs were found in six of the 18 water treatment plants in the IRW, with three of those water treatment plants experiencing continuing problems. Tr. at 11030:24-11031:6 (McGuire).

432. Three of the six water treatment plants that had experienced one or more DBP regulation violations in the past changed their treatment process and no longer experience DBP regulation violations. Tr. at 11036:23-11038:8 (McGuire).

433. The three water treatment plants that continue to experience problems meeting the Maximum Contaminant Level (“MCL”) for DBPs have water intakes that are in physical proximity to water treatment plants that are experiencing no violations for DBP MCLs. See Ok. Ex. 5202; Tr. at 11040:10-11041:25 (McGuire).

434. The record before this court suggests that the continuing violations in the three water treatment plants are not due to the quality of the raw water they treat, but instead are due to the treatment process they currently employ. Tr. at 11041:11-13, 11042:1-11 (McGuire). The cause of continuing DBP violations at the three utilities at issue appears to be the failure to remove organic particulates before chlorinating the water. Tr. at 11042:1-11 (McGuire).

435. The State presented no evidence to establish a taste and odor problem with the drinking water obtained from water sources in the IRW and the evidence supplied by Defendants' expert suggests that no taste and odor problem exists in drinking water drawn from IRW waters. Tr. at 11066:12-11067:2 (McGuire).

436. The very limited data available for cyanotoxins in IRW waters show that the levels of cyanotoxins in the waters of the IRW are relatively low. Tr. at 11068:9-23 (McGuire). Moreover, the ordinary water treatment process removes cyanotoxins. Tr. at 11069:18-11070:5 (McGuire).

437. The EPA sets its MCLs at a very protective rate. As a result, the risk at the MCL is "impossible to detect in the human population." Tr. at 11162:11-21 (Gibb). In fact, MCLs are so protective that a human being would have to drink anywhere from 300 to 8,000 gallons of water at the MCL every day, for a lifetime, to be exposed to the lowest dose that would cause cancer in an animal. Tr. at 11130:3-16 (Gibb).

438. There is no evidence of any risk to human health from the presence of cyanobacteria in the IRW. Tr. at 11153:21-11153:25 (Gibb).

439. The drinking water obtained from IRW water sources is of "excellent" quality. Tr. at 11070:6-11 (McGuire).

3. Impacts on Wildlife

440. The fish and wildlife beneficial use is supported at the highest categorical ranking for the scenic river segments in the IRW. Tr. at 9944:23-9945:4 (Chadwick).

441. The fish and wildlife beneficial use is supported in the IRW's scenic river segments. Tr. at 9944:4-10 (Chadwick).

442. Fish and wildlife communities in the scenic river segments of the IRW are doing well. Tr. at 9945:20-22 (Chadwick). Fish biodiversity and fish communities in the IRW streams are healthy. Tr. at 9959:12-23 (Chadwick).

4. Impacts on Recreation

443. There is no evidence that water quality issues have impacted the number of recreators on the river. Tr. at 4385:21-25 (Caneday).

444. Recreation levels have not declined in the IRW. Tr. at 796:7-15 (Fite); *see also* Tr. at 4384:18-25 (Caneday).

E. Hardship: Defendants' Ability to Rely on State Laws and Regulations

445. An injunction against the application of poultry litter in the IRW would work a substantial hardship on Defendants, independent poultry Growers, and cattle ranchers who have no contract with Defendants but who utilize poultry litter for reasons set forth below.

446. Defendants, Growers, and applicators in the IRW should be able to rely upon Animal Waste Management Plans (AWMPs), Nutrient Management Plans (NMPs), and training sessions issued by the States of Oklahoma and Arkansas to set the standards and rules regarding permissible litter application levels on individual fields. See DJX1191A; DJX1191B; Tr. at 2972:10-2975:18 (Gunter); 3856:24-3857:20, 3864:9-15 (referring to Ok. Ex. 2875) (Pigeon); 3922:24-3923:2 (Collins); 4099:10-4104:13, 4116:19-4117:8 (discussing DJX3051) (Anderson); 4588:5-25, 4605:6-18 (Saunders); 3316:14-3317:6 (Keller); 4143:24-4144:16, 4146:12-17 (Simmons); 4294:24-4295:13, 4295:22-4296:4 (Murphy); 4308:25-4309:4 (McClure); 4450:23-

4451:7 (S. Storm); 4732:5-4733:3, 4734:14-4735:5, 4735:16-4736:9, 4771:21-4773:4, 4777:19-4778:7 (Maupin); 4797:16-24, 4809:23-4810:13, 4831:15-23, 4832:13-19, 4834:7-4835:9, 4839:5-25 (Houtchens); 4860:23-4861:6 (Alsup); Court Ex. 7, Deposition of Leasea Butler at 78:7-15.

447. The issuance of an injunction against conduct authorized by state law would be unfair and disruptive to the rights and interests of individuals who have utilized poultry litter in reliance on AWMPs and NMPs issued by their state government.

F. Remediability of the Problem

448. An injunction is not the appropriate relief if it is unlikely to prevent the damage or remediate the injury at issue. Courts should “refrain[] from issuing an injunction unless the injunction ‘will be effective to prevent the damage which it seeks to prevent.’” *Harang*, 262 F. Supp. at 43-44 (quoting *Great N. Ry Co. v. Local Union No. 2409*, 140 F. Supp. 393 (D. Mont. 1955)); *Park View Heights Corp. v. City of Black Jack*, 454 F. Supp. 1223, 1227 (D.C. Mo. 1978) (same).

449. Even were this Court to accept the State’s position on the merits, there is no evidence in the record sufficient to demonstrate that entry of an injunction by this Court against the single alleged source of poultry litter would be effective to prevent the injury the State alleges. *See id.* (declining to issue an injunction because, among other things, the court “has no way of determining whether any of the suggested remedies will achieve the goals desired by plaintiffs or result in an adverse impact on the surrounding community”).

450. There is no clear course of remediation recommended by the State to address water quality issues in the IRW. Tr. at 7992:8-22 (no feasibility study completed), 8022:19-23 (no preferred remedy presented), 8023:10-15 (not enough information to make a recommendation) (King). Although a number of potential avenues of remediation exist, none,

individually or in combination, has been evaluated for its effectiveness in remediating the water quality issues in the Illinois River or Lake Tenkiller or for its feasibility of implementation. Tr. at 8019:14-18, 8022:7-11, 8023:21-24 (King). No expert for the State has testified that water quality standards would be met or Lake Tenkiller would cease to be eutrophic if poultry litter applications were banned or reduced.

451. Eutrophication is a natural phenomenon in aging lakes. Tr. at 1235:18-23 (Phillips).

452. The State contends that, in order to shift Lake Tenkiller's status from a primarily eutrophic system to a mesotrophic system there would have to be a 70 percent to 80 percent reduction in current phosphorus loading. Tr. at 1235:9-15 (Phillips).

453. The State of Oklahoma has admitted that achieving a 70 percent to 80 percent reduction in phosphorus loading would require "dramatic shifts in land use in the watershed," including "perhaps removal of a significant portion of the agricultural community, and a shift back to the natural forested conditions of the watershed." Tr. at 1236:11-16 (Phillips). Thus, achieving reductions in total phosphorus loads that would effectively remedy the water quality issues identified by the State would be "cost-prohibitive and probably not technically feasible." See Ok. Ex. 3285-OKWRB0013316.

454. Remediation plans for the IRW developed outside the context of this lawsuit focus on all sources of phosphorus and not just on the application of poultry litter as a fertilizer. Tr. at 1361:22-1363:2, 1509:2-24 (Phillips).

455. The States of Oklahoma and Arkansas already regulate the land application of poultry litter. See *supra* ¶¶ 39-125.

456. There are other potential sources of phosphorus – wholly apart from the alleged runoff from land application of litter – that are sufficiently large to account for the algae growth found in the main stem of the Illinois River. Tr. at 9116: 9-13 (Connolly).

457. Accordingly, the record in this case is insufficient to support a finding that even a complete cessation of the land application of poultry litter in the IRW will significantly improve water quality in the IRW. Tr. at 9000:25-9001:10 (Connolly).

458. As State witness Ed Fite related, chemical fertilizers with nutrient combinations different from those sold in certain common formulas are not readily available. Tr. 855:16-856:8 (Fite). According to the State’s expert on remediation, an increase in the use of phosphorus-containing commercial fertilizer, which is unregulated in Oklahoma, could “defeat the purpose” of a complete prohibition on the land application of poultry litter. Tr. at 8029:18-24 (King).

459. A ban on the use of all fertilizer that contains phosphorus within the IRW is not practicable or enforceable. Tr. at 8039:20-8040:5 (King).

460. The State has requested that Defendants be ordered to spend \$500 per acre to install, and \$500 per acre per year thereafter to maintain, vegetative buffer strips in unidentified locations along streams and rivers throughout the IRW. Tr. 8068:8-10, 8068:24-8069:3 (King). Implementing such an injunction would necessitate that private landowners agree to either sell their land or grant easements to it. Tr. at 8072:18-21, 8073:1-4 (King).

461. The State’s remediation expert, Todd King, also suggested that increased treatment of drinking water to prevent DBPs was a remedial option. Tr. at 8007:1-14 (King). However, King committed a fundamental error in his cost calculation of this option, rendering it entirely unusable. Tr. at 8091:19-8093:14, 8094:6-9 (King). Even setting cost aside, there is no evidence in the record to suggest such a remedy would do anything to address the injury of

which the State complains. King did not examine any of the drinking water facilities, does not know what their current processes are, and therefore has no information on whether any of them need or require an upgrade of the sort he contemplates. Tr. at 8007:15-25, 8008:6-13 (King). The Defendants' expert, who did visit a number of the drinking water facilities in the IRW, Tr. at 11031:20-11032:11, 11035:3-5, 11038:9-15 (McGuire), determined that their current treatment procedures are sufficient to remove the cyanotoxins discussed in this case. Tr. at 11109:22-11110:1. Moreover, the undisputed evidence in the record is that drinking water obtained from the IRW is of good quality and poses no threat to human health. *See supra* ¶ 171.

462. With respect to other remediation options identified in the King testimony, there is no reliable cost estimate for any of the remediation options, individually or in combination. Tr. at 7995:7-8 (King). Nor is there any cost-benefit analysis relating to these remedial alternatives. Tr. at 8104:13-17 (King).

463. While there is already an infrastructure for transporting poultry litter outside the watershed, there is little or no evidence demonstrating that it would be feasible to enjoin the Defendants to ship all litter out of the IRW. There is no reliable evidence on the issue of whether there is sufficient agricultural acreage near the IRW that could take and use all of the poultry litter in the IRW. The availability of sufficient accessible farmland cannot be assumed because the demand for litter is often limited in areas that traditionally have not received it, in part because farmers lack the specialized equipment to transport and spread it.

464. Moreover, the State has not presented any evidence of the cost of trucking all or some of the litter out of the IRW. Professor Taylor's estimates were based upon an academic study published in 2007 and made a number of unrealistic assumptions, including using

unsubstantiated cost numbers and basing distribution out of a non-existent centralized point. Tr. at 6945:25-6949:2 (Taylor).

465. The Court finds based upon the limited information available that the cost of collecting and trucking all litter out of the IRW would be a substantial hardship.

466. That cost to Defendants does not include the cost to Growers and ranchers in the IRW from the loss of the litter.

G. Effect of injunction on poultry farmers, cattle ranchers, and the economy of the IRW

467. When considering the appropriateness of injunctive relief, “courts of equity should pay particular regard for the public consequences in employing the extraordinary remedy of injunction.” *Romero-Barcelo*, 456 U.S. at 312.

468. Many of the potential remedial alternatives discussed in this suit would cause significant adverse impacts on the public and third parties, and be the source of public concern. Tr. at 8117:6-7 (King).

1. The value of poultry litter

469. There currently are fields and pastures in the IRW that undisputedly require additional phosphorus for optimal growth of forage. Tr. at 10649:2-7 (Dicks).⁴⁶

⁴⁶ See also, e.g., SOK6942H_ODAFF(DEC07)001266; SOK6942H_ODAFF(DEC07)001270; SOK6942B_ODAFF(DEC07)003179; SOK6942B_ODAFF(DEC07)003180; SOK6942B_ODAFF(DEC07)003184; SOK6942I_ODAFF(DEC07)003715; SOK6942I_ODAFF(DEC07)003716; SOK2860B_ODAFF(DEC07)004080; SOK2860B_ODAFF(DEC07)004077; SOK6942J_ODAFF(DEC07)004161; SOK2825B_OKDA0008803; SOK2825B_OKDA0008801; SOK2825B_OKDA0008806; SOK2825B_OKDA0008807; SOK2830B_OKDA0009037; SOK2890B-0003; SOK2890B-0004; SOK2831B_ODAFF(DEC07)003439; SOK2707B_ODAFF_SUPP_05-08_002265; SOK2707B_ODAFF_SUPP_05-08_002267 (Sample of STP results in the record with P level below 65).

470. There currently are fields and pastures in the IRW that require additional nitrogen for optimal growth of forage.⁴⁷ Tr. at 4484:11-16 (Reed); 4585:8-14 (Saunders).

471. Poultry litter contains nutrients necessary for plant growth and is used as a fertilizer. Tr. at 1448:16-1449:4 (Phillips); Tr. at 10454:6-10, 10460:6-8 (Dicks); 3724:18-3725:2, 3725:25-3726:5, 3734:4-12 (J. Pigeon); 3903:25-3904:5 (R. Collins); 3958:4-19 (D. Henderson); 4500:11-21 (J. Reed); 4864:3-8 (T. Alsup). Poultry litter performs well as a fertilizer. Tr. at 4500:11-21 (Reed); 4150:24-4151:2 (Simmons).

472. Poultry litter is more affordable than chemical fertilizers. Tr. at 10470:2-9, 10456:23-10457:1 (Dicks); 4553:22-4554:6 (Saunders); *see also* 1453:2-5 (Phillips: farmers complain about the cost of commercial fertilizer).

473. Applying a ton of litter costs a Grower \$18.28. Tr. at 10470:2-9 (Dicks).

474. Buying and applying a ton of litter costs a non grower \$30.28. Tr. at 10470:2-9 (Dicks). Applying an equivalent amount of N and P costs \$113.86. Tr. at 10470:2-9 (Dicks). Applying an equivalent amount of N costs \$55.17. Tr. at 10468:19-10469:10 (Dicks).

475. The cost of chemical fertilizers fluctuates greatly with energy costs, and the cost of these fertilizers is expected to continue to be high in the near and long term, especially because the supply of phosphorus is dwindling and expected to disappear in 15 to 25 years. Tr. at 6942:7-18, 6806:17-6807:7 (Taylor); Tr. at 10467:23-25, 10468:10-12 (Dicks).

⁴⁷ *See, e.g.*, SOK2860B_ODAFF(DEC07)004080; SOK2860B_ODAFF(DEC07)004077; SOK2825B_OKDA0008803; SOK2825B_OKDA0008801, SOK2825B_OKDA0008806, SOK2825B_OKDA0008807; SOK2830B_OKDA0009037; SOK2831B_ODAFF(DEC07)003439, SOK2707B_ODAFF_SUPP_05-08_002265; SOK2707B_ODAFF_SUPP_05-08_002267 (soil test results all listing Nitrogen levels as “deficient”).

476. The cost of litter fluctuates with the cost of chemical fertilizers because litter and chemical fertilizers are substitutes. Tr. at 10469:11-19 (Dicks).

477. Poultry has value other than as a source of phosphorus. Tr. at 560:11-23 (Tolbert). It is valuable as a soil amendment, wholly apart from the value of nitrogen and phosphorus as nutrients. Tr. at 1448:16-1449:4, 1453:21-1454:17 (Phillips). Poultry litter may also provide other micronutrients to the soil and may improve soil pH, improve water retention of soil, and promote aggregation of soil particles. Tr. at 5129:5-5132:21 (Johnson).

478. Poultry litter is bought and sold as a commodity. Tr. at 3734:1-9, 3856:11-19 (Pigeon); 4471:19-21; 4507:18-4508:3 (Reed); 3901:10-16 (Collins); 4552:19-4553:18, 4589:15-4590:18 (Saunders); 6831:17-6832:5 (Taylor) (poultry litter has cash value). It has value both for Growers and applicators. Tr. at 4089:13-19 (Anderson); 4490:18-21 (Reed); 1447:3-10 (Phillips); 3892:8-15 (Collins). Poultry farmers have been able to buy and sell poultry litter for up to \$15 per ton in the recent past. Tr. at 4590:12-16 (Saunders).

479. Poultry farmers own the poultry litter generated from their operations. Tr. at 4088:24-4089:23 (Anderson); 4496:2-9, 4525:5-16 (Reed); 4545:17-22 (Saunders); 3026:25-3027:1 (M. Henderson); 4687:12-19, 4763:4-11 (Maupin); 4802:10-17 (Houtchens); Ct. Ex. 6 (Wear Dep.), at 55:7-14; Tr. at 6831:3-11, 6909:2-9 (Taylor).

480. Farmers improve their business operations by using poultry litter as a fertilizer. Tr. at 4089:17-4090:4 (Anderson); Tr. at 4491:2-6 (Reed). A number of poultry Growers have multiple agricultural activities on their farms (such as raising cattle and other livestock) and view poultry litter as part of the compensation that they receive for growing poultry. Tr. at 3958:4-3959:8 (D. Henderson) (it is common for farmers to own both poultry and cows and to use the litter to raise forage); 4421:19-4422:2 (S. Storm) (“Typically one of the benefits of a contractual

relationship [with a poultry company] is that the contract grower wants the manure for their own land for fertilizing purposes.”); 4574:8-19 (Saunders) (poultry litter from grower operation increased cattle production four-fold).

481. For example, one grower testified that he started a poultry operation for the purpose of obtaining litter so that he could increase his forage yields. Since he began fertilizing his fields with litter, he has raised the number of the head of cattle he can run from 30 to 125, which has increased his income from his cattle operation by \$42,500. Tr. at 4574:8-19, 4607:21-25 (Saunders).

482. Joel Reed testified that he became a poultry grower in part to obtain poultry litter for use on his cattle pastures, and that without poultry litter his cattle operations would be substantially curtailed. Tr. at 4490:4-4491:6 (Reed) (“If I didn’t have the litter, I wouldn’t be able to afford to fertilize my land and I would probably have to cut my cattle herd two-thirds.”); *see also* Tr. at 4497:1-4498:3 (Reed).

483. Growers are not the only parties whose investment-backed investments will be upset by an injunction. Roger Collins testified that he has invested \$500,000 of capital into his poultry land application business and “hope[s]” it has a future. Tr. at 3935:25-3936:8 (Collins).

484. Farmers rely on the supplemental income from sales of poultry litter. Tr. at 3856:20-23 (Pigeon); 4497:1-4498:3 (Reed); 4555:15-4556:2, 4590:19-4591:10 (Saunders); 1446:14-1447:10 (discussing Ok. Ex. 5881 at 3) (Phillips); *see also* Tr. at 10145:5-15 (Rausser).

2. The Economic Impact of Prohibiting the Use of Poultry Litter in the IRW

485. The IRW currently sustains a healthy cattle ranching industry. Farmers currently rely on poultry litter as “an excellent fertilizer resulting in pastures that can support additional

head of cattle.” Tr. at 1446:14-1447:10 (discussing Ok. Ex. 5881 at 3) (Phillips); *see also* Tr. at 3958:4-3959:8 (D. Henderson); Tr. at 10454:5-13, 10460:6-11 (Dicks).

486. Certain yields of forage and hay are required in order to sustain the current cattle population in the IRW. Tr. at 10455:23-10456:11 (Dicks).

487. A complete prohibition on the land application of poultry litter would result in one of two possible outcomes. One outcome is that farmers and ranchers would substitute chemical fertilizer in order to obtain the yields of forage and hay required to sustain the current cattle population. Another outcome is that there would be a reduction in cattle operations proportional to the reduction of forage. Tr. at 10493:15-10494:8, 10495:4-20 (Dicks).

488. The potential economic impact on the economy of the IRW from a complete ban on the land application of poultry litter would be substantial. Defendants’ expert used the IMPLAN model to estimate the impact at \$34 million to \$88 million per year. Tr. at 10497:21-22, 10500:2-4 (Dicks). This is a credible estimate.

489. A complete ban on the land application of poultry litter in the IRW would also impact employment in the agricultural and ranching industries in the IRW. Defendants’ modeling estimated a loss of between 500-1100 jobs. Tr. at 10497:23-24, 10500:5-6 (Dicks).

490. The complete removal of poultry litter from the IRW will cause a negative economic impact and could be “devastating” to IRW farmers. Tr. at 4590:19-4591:10 (Saunders); Tr. at 4089:17-4090:4 (Anderson); Tr. at 4491:2-6, 4497:13-4498:3 (Reed); 10495:23-10500:6 (Dicks); DJX6356; DJX6357.

3. Practical Constraints on an Injunction

491. A number of practical constraints, detailed below, are proper considerations in determining the appropriateness of injunctive relief. Many of these practical restrictions also inform the Court’s evaluation of other factors, such as remediability and harm to third parties.

a. **Reach**

492. Issuing an injunction that orders Defendants to abate, remediate, or clean-up a nuisance on property or land that they do not own raises difficult and novel legal issues. The court in *B.H. v. Gold Fields Mining Corp.*, 506 F. Supp. 2d 792 (N.D. Okla. 2007), considered this very issue and after an examination of the relevant Oklahoma statutory and common law regarding abatement, the court concluded:

[N]either statute nor common law clearly specifies whom the Court may order to abate a nuisance.... [T]here is no clear law defining whether a court has the equitable authority to order abatement under these circumstances [where defendants do not own the property or land in question], nor does this Court need to predict what the Oklahoma Supreme Court would rule.”

Id. at 800-01 (judgment based on other grounds).

493. Federal law clearly provides that an injunction only binds parties to the suit or those who are in active concert or participation with them. *See* Fed. R. Civ. P. 65(d)(2) (order granting an injunction “binds only the following who receive actual notice of it by personal service or otherwise: (A) the parties; (B) the parties’ officers, agents, servants, employees, and attorneys; and (C) other persons who are in active concert or participation”); *Golden State Bottling Co. v. NLRB*, 414 U.S. 168, 179 (1973) (Rule 65 codifies the “common-law doctrine that a decree of injunction” applies only to parties and “those identified with them in interest, in privity with them”); *Alemite Mfg. Corp. v. Staff*, 42 F.2d 832, 832 (2d Cir. 1930) (“[N]o court can make a decree which will bind any one but a party.”); *In re: Methyl Tertiary Butyl Ether (“MTBE”) Prods. Liab. Litig.*, 209 F.R.D. 323, 346 (S.D.N.Y. 2002) (finding injunctive relief inappropriate because “while an order from this Court to ‘clean up plaintiffs’ property’ would serve to bind the defendants, it would have no operative effect on” non-parties involved in the alleged pollution); *see also Aerated Prods. Co. v. Department of Health*, 159 F.2d 851, 854 (3rd Cir. 1947). In *MBTE*, as here, non-parties to the litigation owned the instrumentality that was

allegedly the source of the pollution. The court found injunctive relief inappropriate and observed that “[w]here a third party-owned [instrumentality] is the source... the third party’s cooperation – in allowing defendants to enter its property, in ... taking whatever steps are necessary to curtail future [pollution] – is essential to any remediation program.” *MBTE Prods. Liab. Litig.*, 209 F.R.D. at 346.

494. Defendants do not control the poultry Growers’ land application of poultry litter. Tr. at 3843:12-20, 3734:1-9 (Pigeon); 4096:3-15 (Anderson); 4491:13-16, 4493:15-4494:1 (Reed); 4545:17-22, 4578:22-4579:5 (Saunders); 3914:14-3915:3 (Collins); 4802:10-14, 4844:15-24 (Houtchens); 4300:9-16 (Murphy); 4954:12-4955:7 (Alsup); 3419:20-3420:12 (Pilkington); 4449:6-18 (S. Storm); *see also* 3949:13-18, 3952:23-3953:3 (Collins). The State’s economics expert agreed that Growers have full control over the poultry litter. Tr. at 6831:3-11, 6909:2-9, 6953:9-12 (Taylor).

495. Defendants and poultry Growers both consider poultry Growers to be independent contractors. Ok. Ex. 6564-A, Ok. Ex. 6564-B, Ok. Ex. 6564-C; Tr. at 3412:1-8, 3423:22-3424:9, 3425:5-21, 3426:5-14 (Pilkington); 4301:21-4302:1 (Murphy); 4733:1-3 (Maupin); 3025:14-18, 3046:10-11 (M. Henderson); 4514:9-12 (Reed); 3926:15-3927:4 (Collins); 4084:19-20 (Anderson); *see also supra* ¶¶ 278-297 (listing other factors that establish Growers’ independence from defendant poultry companies).

496. Individuals other than the poultry Growers who contract with Defendants land-apply poultry litter in the IRW. Tr. at 3734:4-12 (Pigeon); 3892:8-15, 3901:10-16 (Collins); 4471:15-21 (Reed).

497. Even if the Court were to find that poultry Growers are employees or agents of the Defendants, an injunction in this case could not reach the conduct of Growers not affiliated

with Defendants, such as cattle ranchers, farmers, or other non-Growers. These groups will be able to continue to land apply poultry litter and chemical fertilizers. This lessens the likelihood that any injunctive relief awarded by this Court will be practicable or enforceable.

b. Practicability and Enforcement

498. In determining the appropriateness of an injunction, the Court should also consider its practicability and enforceability. *See* Restatement (Second) of Torts § 943 (1979) (“The practicability of drafting and enforcing an order or judgment for an injunction is one of the factors to be considered in determining the appropriateness of injunction against tort.”).

499. If the injunction is impracticable or too unwieldy to enforce, it should not be granted. *See* Restatement (Second) of Torts § 943 cmt. a (“If drafting and enforcing are found to be impracticable, the injunction should not be granted.”); *see, e.g., Bethlehem Eng’g Export Co. v. Christie*, 105 F.2d 933, 935 (2d Cir. 1939) (denying injunctive relief as impracticable); *Panelko, Inc. v. John Price Assocs.*, 642 P.2d 1229, 1235-36 (Utah 1982) (same).

500. Similarly, if enforcement will create too great a burden on the Court, it is within the Court’s discretion to decline to issue the injunction. *See Friends of the Earth, Inc. v. Laidlaw Envtl. Servs. (TOC), Inc.*, 528 U.S. 167, 193 (2000) (district court in environmental case may properly decline to issue an injunction that “would be an excessively intrusive remedy, because it could entail continuing superintendence of the permit holder’s activities by a federal court – a process burdensome to court and permit holder alike”); *see also, e.g., Sierra Club v. TVA*, 592 F. Supp. 2d 1357, 1376 (N.D. Ala. 2009) (declining to issue permanent injunction against electric utility for CAA violations because “the Court finds that an injunction would be an excessively intrusive remedy, because it could entail continuing supervision of TVA’s activities by this Court”) (citing *Friends of the Earth*, 528 U.S. at 193).

501. To the extent that poultry litter economically can be imported into some areas of the IRW, an order compelling these Defendants to ship poultry litter generated by their contract Growers outside of the IRW will not necessarily result in a substantial reduction in the use of poultry litter within those areas because of the ease with which third parties can replace the litter. The extent to which such an import of litter is economical turns on the particular location of the fields or pastures and the cost of the litter and transportation, which varies with energy costs. Tr. at 3934:10-14 (Collins); 6806:17-6807:7 (Taylor).

502. The record evidence shows that some farmers and ranchers will seek opportunities to purchase litter as a cost effective substitute for commercial fertilizer.

503. To the extent that an order compelling Defendants to ship poultry litter generated by their contract Growers outside of the IRW results in an increase in the use of commercial fertilizers, such an order will not necessarily result in a substantial reduction in nutrient runoff from fields and pastures in the IRW. Tr. at 8029:18-24 (King).

504. An injunction banning the use of all fertilizer that contains phosphorus within the IRW is not being sought by the State and cannot be achieved by enjoining the parties before the Court. Tr. at 8039:20-8040:5 (King).

505. An order to remove portions of poultry litter or to reduce application of poultry litter will require significant oversight for compliance and effectiveness. Tr. at 8120:8-12 (King). This would create a substantial burden on the Court.

H. Conclusions Regarding Injunctive Relief

506. This Court finds that there has not been a showing of irreparable injury. While there is evidence in the record of increased algae production in some waters in the IRW and the presence of phosphorus in such waters above the 0.037 mg/L phosphorus criterion for the Scenic River portions of such waters, no credible evidence allocations a percentage of that phosphorous

to poultry litter applications for which Defendants may be held responsible or that such conditions would be ameliorated if poultry litter applications were banned or reduced.

507. However, the State of Oklahoma has had and continues to have a variety of legal remedies and resources limit phosphorus loadings to the Illinois River and thereby mitigate the injury for which it seeks injunctive relief. Those avenues of redress include exercising its own existing regulatory powers to ban litter application in the Oklahoma portion of the IRW, performing a TMDL study that would pinpoint sources of nutrient loading, and taking steps to limit or reduce other sources of phosphorus which currently are completely unregulated. The State's failure to exercise its existing authority, its failure to address other sources, its decision to intentionally delay the TMDL process all counsel against a finding that an irreparable injury exists. Injunctive relief is an extraordinary remedy that should not be awarded to a litigant that has intentionally turned its back on other avenues to address the injury for which it seeks relief.

508. With respect to the balance of hardships, the "injury" to the waters of the IRW largely is an aesthetic injury. There is no substantiated threat to human health, drinking water, recreational use or wildlife. By contrast, an order prohibiting the use of litter as a fertilizer would impose substantial costs upon Defendants, could financially "devastate" many Growers and ranchers and would have a damaging impact on the cattle industry and economy of the IRW. For all the reasons stated above, this Court concludes that the balance of hardships and effects on the public interest weigh against granting injunctive relief.

509. The ability of an injunction to remedy the injury for which the State seeks relief is questionable at best. The State's own witnesses were unable to articulate a clear avenue for remediation, providing only rudimentary guidance regarding feasibility, cost, and, most importantly, likely effectiveness. Indeed, the State's experts created considerable doubt

regarding the feasibility of the proposed remedies, raising questions of widespread public concern, prohibitive costs, and the retrogression of the lands' utility in the watershed.

510. An order for injunctive relief would place the considerable costs of implementation and enforcement on this Court. The kind of reporting the Court would require in order to properly oversee compliance would be akin to the system the State already has in place to implement and enforce the laws and regulations governing the land application of poultry litter. That the Court would, in essence, be required to establish a parallel litter regulatory system is further confirmation that an injunction is simply not the proper tool to redress the injury for which the State seeks relief.

511. Moreover, the State seeks an injunction to overrule the very conduct the State has sanctioned by way of its legislative and regulatory processes. An injunction in this area will not only undo the State's current legislation and policy but will hamstring the State's ability to address any number of possible future concerns including a shrinking agricultural base or issues involving declining nutrient values, increasing erosion of soils, or the regulation of chemical fertilizers. These same considerations apply with regard to the State of Arkansas, which regulates the land application of all nutrients, including chemical fertilizers. Although both states regulate the land application of poultry litter, each state's legislative and administrative processes led it to a unique body of regulations. It is not in the public interest for this Court to overrule and otherwise restrict two States' policy options in such a complex area.

For the foregoing reasons, the Court concludes that the State has failed to carry its burden of proof as to any of its remaining claims and that judgment is appropriate in Defendants favor on all counts

IT IS SO ORDERED THIS _____ DAY OF _____, 2010.

Hon. Gregory K. Frizzell
United States District Judge
Northern District of Oklahoma

ADDENDUM A – Exhibit Index

Exhibit 1	Trial Transcripts (Opening Statements; State’s Case-in-Chief; Midtrial Motion Arguments)
Exhibit 2	Trial Transcripts (Defendants’ Case-in-Chief)
Exhibit 3	Trial Transcripts (State’s Rebuttal Case)
Exhibit 4	Aug. 18th Hearing Transcripts
Exhibit 5	Sept 4 Hearing Transcripts
Exhibit 6	Hudson Depo Court Exhibit (CE) 4
Exhibit 7	Wear Depo CE 6
Exhibit 8	Butler Depo CE 7
Exhibit 9	Haggard Depo CE 8
Exhibit 10	Edwards Depo CE 11
Exhibit 11	Thompson Depo CE 13
Exhibit 12	Peach Depo CE 14